Doc. Ref. **FP56 (5 of 7)** Appl. No. 10/553,685

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Leu	Ala	Ara	Ser	Arg	Ile	Gln	Ġlv	Leu	Gly	Leu	Tyr	Ala	Ala	Arg	Asp
				1685			•		1690		-			1695	
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Asn	Glu	Val			Arg	Lys	Glu	Lys	Leu	Tyr	Glu	Ser	Gln	Asn	Arg
		1715	;				1720)				1725	i		
Gly			Met	Phe	Arg	Met		Asn	Asp	His	Val 1740		Asp	Ala	Thr
•	1730		G1	n	7.1 -	1735		T1 ^	λ	ui-			^ ומ	Dro	7 c=
		СТΆ	GTÅ	PIO		Arg	Tyr	тте	ASII	1755		cys	wiq	PLO	
1745		אן -	G1	37-3	1750	Thr	Dha	c1	Δrα			Lve	Tle	T3.0	1760
cys	val	ALA	GIU	AGT	val	TIII	LIIE	GIU	~ +9	GTA	****	⊥y ⊃	TTC	T T G	TT6
				1765	;				1770					1775	

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Pro Arg Val Tyr Gln Asn Arg Asp Phe Arg Gly His Asn Arg Gly Tyr
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Arg Arg Pro Tyr Tyr Phe Arg Gly Arg Asn Arg Gly Phe Tyr Pro Trp
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Gly Gln Tyr Asn Arg Gly Gly Tyr Gly Asn Tyr Arg Ser Asn Trp Gln
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Asn Ser Asp Lys Ser Ser Ser Asp Arg Ser Arg Arg Ser Ser Ser
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Gly Thr Ser Gln Asp Thr Lys Ala Ser Glu Ser Ser Lys Pro Trp Pro
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Lys Thr Glu Asn Gly Lys Asp Lys Glu Gln Lys Gln Thr Asn Thr Asp
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Asp Phe Glu Lys Lys Met Ala Asp Phe His Lys Glu Glu Met Asp Asp
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Glu Pro Lys Phe Met Ser Lys Val Ile Gly Ala Asn Lys Asn Gln Glu
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Glu Glu Lys Ser Gly Lys Trp Glu Gly Leu Val Tyr Ala Pro Pro Gly
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Lys Glu Lys Gln Arg Lys Thr Glu Glu Leu Glu Glu Glu Ser Phe Pro
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Arg Asp Lys Leu Gly Ala Lys Gly Asp Phe Pro Thr Gly Lys Ser Ser
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Asp Glu Asp Leu Ala Arg Pro Ser Gly Leu Leu Ala Gln Glu Arg Lys
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Glu Leu Phe Ala Gln His Ile Val Thr Ile Val His His Val Lys Glu
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His His Phe Gly Ser Ser Gly Met Thr Leu His Glu Arg Phe Thr Lys
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Tyr Leu Lys Arg Gly Thr Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser
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 Pro Glu Ile His Arg Arg Ile Asp Ile Ser Pro Ser Thr Phe Arg Lys
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His Gly Leu Ala His Asp Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr
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Ser Gly Asn Asn Asn Asn Ser Asn Asn Asp Phe Gln Lys Arg Asn
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Arg Glu Glu Glu Trp Asp Pro Glu Tyr Thr Pro Lys Ser Lys Lys Tyr
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Tyr Leu His Asp Asp Arg Glu Gly Glu Gly Ser Asp Lys Trp Val Ser
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Arg Gly Arg Gly Arg Gly Ala Phe Pro Arg Gly Arg Gly Arg Phe Met
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Phe Arg Lys Ser Ser Thr Ser Pro Lys Trp Ala His Asp Lys Phe Ser
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Val Val Asn Ser Gln Tyr Gly Thr Gln Pro Gln Gln Tyr Pro Pro Ile
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His Asp Arg Phe Glu Glu Ser Ala Lys Ala Tyr His Glu Leu Leu Glu
Ala Ser Leu Leu Arg Glu Ala Val Ser Ser Gly Asp Glu Lys Glu Gly
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Leu Lys His Pro Gly Leu Ile Leu Lys Tyr Ser Thr Tyr Lys Asn Leu
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Ala Gln Leu Ala Ala Gln Arg Glu Asp Leu Glu Thr Ala Met Glu Phe
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Tyr Leu Glu Ala Val Met Leu Asp Ser Thr Asp Val Asn Leu Trp Tyr
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Lys Ile Gly His Val Ala Leu Arg Leu Ile Arg Ile Pro Leu Ala Arg
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His Ala Phe Glu Glu Gly Leu Arg Cys Asn Pro Asp His Trp Pro Cys
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Leu Asp Asn Leu Ile Thr Val Leu Tyr Thr Leu Ser Asp Tyr Thr Thr
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Lys Gly Leu Val Leu Lys Glu Lys Ile Phe Glu Glu Gln Pro Cys Leu
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Arg Lys Asp Ser Leu Arg Met Phe Leu Lys Cys Asp Met Ser Ile His
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Asp Val Ser Val Ser Ala Ala Glu Thr Gln Ala Ile Val Asp Glu Ala
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Leu Gly Leu Arg Lys Lys Arg Gln Ala Leu Ile Val Arg Glu Lys Glu
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Pro Asp Leu Lys Leu Val Gln Pro Ile Pro Phe Phe Thr Trp Lys Cys
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Leu Gly Glu Ser Leu Leu Ala Met Tyr Asn His Leu Thr Thr Cys Glu
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Pro Pro Arg Pro Ser Leu Gly Lys Arg Ile Asp Leu Ser Asp Tyr Gln
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Asp Pro Ser Gln Pro Leu Glu Ser Ser Met Val Val Thr Pro Val Asn
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Val Ile Gln Pro Ser Thr Val Ser Thr Asn Pro Ala Val Ala Val Ala
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Glu Pro Val Val Ser Tyr Thr Ser Val Ala Thr Thr Ser Phe Pro Leu
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His Ser Pro Gly Leu Leu Glu Thr Gly Ala Pro Val Gly Asp Ile Ser
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Gly Gly Asp Lys Ser Lys Lys Gly Val Lys Arg Lys Lys Ile Ser Glu
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Glu Ser Gly Glu Thr Ala Lys Arg Arg Ser Ala Arg Val Arg Asn Thr
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Phe Leu Pro Ser Arg Leu Arg Lys Leu Asp Pro Glu Glu Glu Asp Asp
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Asn Gly Gly Ile Leu Glu Leu Met Met Arg Tyr Leu Lys Ala Met Gly
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 Ile Ile Leu His Arg Ile Ile Trp Gln Glu Glu Asp Thr Phe His Ser
```

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B65	Cys	1113	·		870					875					880
~1	Th~	Dro	Mat	T.All	Dro	Ser	Ser	Leu	Met	Leu	Leu	Asn	Thr	Ala	His
JIU	1111	PLO	Mec	885		DC2			890					895	
		•	~1	7	7 ~~	car	Trp	Cve		Δsn	Ser	Asp	Glv	Ala	Leu
Glu	Tyr	Leu		Arg	Arg	261	115	905	Cys	AD			910		
			900	•	_		T	903 01=	T 1/6	C1.,	T.011	aΓα		Ser	Thr
Leu			Tyr	Val	Arg	vaı	Leu	GIII	гåг	GIU	Dea	925			
		915			•	_	920	~ 7	~1	7	~1		λla	T.611	Glu
Ser	Glu	Asp	Thr	His	Pro		Lys	GIU	GIU	Leu	GIU	TIIL	AIG	Leu	014
	930					935	_	_,		6	940	T	C ~ ~	Tare	בומ
Gln	Cys	Phe	Tyr	Cys		Tyr	Ser	Pne	Pro	ser	гуѕ	гуs	261	цуз	960
945					950		_			955	•	.	71.0	Them	-
Arg	Tyr	Leu	Glu	Glu	His	Ser	Ala	Gln	Gin	Val	Asp	Leu	tre	975	GIU
				965					970	_	_		•		C1
Asp	Ala	Leu	Phe	Met	Phe	Glu	Tyr	Phe	Lys	Pro	Lys	Thr	Leu	Pro	GIU
			980					985				_	990		•
Phe	Asp	Ser	Tyr	Lys	Thr	Ser	Thr	Val	Ser	Ala	Asp	Leu	Ala	Asn	Leu
		995					1000)				100	5		
Leu	Lys	Arg	Ile	Ala	Thr	Ile	Val	Pro	Arg	Thr	Glu	Arg	Pro	Ala	Leu
	1016	0				101	5				102	ס			
Ser	Leu	Asp	Lys	Val	Ser	Ala	Tyr	Ile	Glu	Gly	Thr	Ser	Thr	Glu	Val
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Pro	Cvs	Leu	Pro	Glu	Gly	Ala	Asp	Pro	Ser	Pro	Pro	Val	Val	Asn	Glu
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T.e11	Tvr	Tvr	Leu	Leu	Ala	Asp	Tyr	His	Phe	Lys	Asn	Lys	Glu	Gln	Ser
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Tve	בומ	Tle	Lvs	Phe	Tvr	Met	His	Asp	Ile	Cys	Ile	Cys	Pro	Asn	Arg
_		107	5				108	0				108	5		
25-	3	20,	Trn	Ala	Glv	Met	Ala	Leu	Ala	Arg	Ala	Ser	Arg	Ile	Gln
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	100	Λ.				109	5								
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			1380)				1385	;	Ser			1390)	
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Ser	Arg			1525	5				1530	0				153	
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		155	Ser 5	Ser			156	0 .				1569	5		Ala
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Asp	Gly	Ser	Gly	Pro	Gly	Pro	Glu			Gly	Lys	Val	_		Leu

														1705				
		1715					1720		_			1725		a 1	C			
				Val 2		1735					J / 44 U							
C117	Glu	λνα	Tare	Asp :	Lvs (Glu	Ser	Pro .	Arg	Ala	Gly	Pro	Thr	Glu	Pro			
1745					1750					7/22)				1,00			
1/43	•	mh		Glu .	1750 11a	Thr	Va1	Cvs	His	Ser	Asp	Leu	Glu	Arg	Thr			
Met	Asp	Thr	ser			1111	· 42	-7-	1770	1	•			1775	;			
				1765 Pro	~-	•	D	71-	720	λen	Δrσ	Glv	Pro	Glu	Ser			
Pro	Pro	Leu			GIY	Arg	PIO	770F	n- 9	rob		1	1790)				
			1780)		_		1785	.	C	T1.0	Car			Gln			
Arg	Pro	Thr	Glu	Leu	Ser	Leu	Glu	GIU	Leu	Ser	TIE	367		A				
		1795	;				1800	· _			_	1809		210	Dwo			
Gln	Pro	Thr	Pro	Leu	Thr	Pro	Ala	Gln	Pro	Ala	Pro	Ala	PLO	Ala	PLO			
						1815					1820)						
Ala	Thr	Thr	Thr	Gly	Thr	Arg	Ala	Gly	Gly	His	Pro	Glu	GIU	Pro	Leu			
	-				1830)				T62:	9				1010			
Ser	Ara	Leu	Ser	Arg	Lys	Arg	Lys	Leu	Leu	Glu	Asp	Thr	Glu	Ser	Gly			
				10/5					1850	,				TOJ.	,			
Lve	Thr	T.em	Len	Leu	Aso	Ala	Tyr	Arg	Val	Trp	Gln	Gln	Gly	Gln	Lys			
			1061	٦.				186)				10/	•				
á1	*** 1	71-	Tire	Asp	T. 2 11	Glv	Ara	Val	Glu	Arg	Ile	Met	Ser	Glu	Thr			
GIY	vaı			ASP	DCu	- 1	1880)		_		188	5					
_		1875	71.0	Lys	Cln.	Wa l	Asn	Glu	Glu	Ala	Ala	Leu	Glu	Gln	Ala			
Tyr			116	пåр	GIII	1899	HOP :			•	190	0						
	189	0	_	~1	••- 1	107	, T 011	C311	בות	Δla			Ara	Gln	Ala			
		Phe	Cys	GIn			rea	GIY	ALG	191	5		5		1920			
190	5			_	1910	J_\		T	***	Dro	Tare	Acn	Ser	Ara	Glu			
Ser	Gly	Asp	Thr	Pro		Thr	Pro	гуѕ	TIS	V PTO	пуэ	rap		193	5			
				1925	5			-	193		Dwo	n cn	Pro					
Asn	Phe	Phe	Pro	Val	Thr	Val	Val	Pro	Tnr	Ald	PLO	ASP	195	^ ***				
			194	0				194	5 - •	•• • =	ml	T			Bro			
Ala	Asp	Ser	Val	Gln	Arg	Pro	Ser	Asp	Ala	His	Thr	гуs	- PIO	Arg	FIO			
		195	5				196	0			_	196		21-	C.~			
Ala	Leu	Ala	Ala	Ala	Thr	Thr	Ile	Ile	Thr	Cys	Pro	Pro	ser	Ald	Ser			
	107	^				197	5				198	U						
Ala	Ser	Thr	Leu	Asp	Gln	Ser	Lys	Asp	Pro	Gly	Pro	Pro	Arg	Pro	His			
300	-				199	0				199	75				2000			
Ara	Pro	Glu	Ala	Thr	Pro	Ser	Met	Ala	Ser	Lev	Gly	Pro	Glu	Gly	Glu			
				200	5				201	.0				201	.5			
Glis	Leu	Ala	Arq	Val	Ala	Glu	Gly	Thr	Ser	Phe	Pro	Pro	Gln	Glu	Pro			
			202	0				202	5				203	U				
7	. uic	Ser	Pro	Gln	Val	Lvs	Met	Ala	Pro	Thi	: Ser	Ser	Pro	Ala	Glu			
_		202					204	O				204	15					
		203	· Trans	Pro	Δla	Glu	Ala	Ala	Leu	Gly	/ Thr	Gly	/ Ala	Glu	Pro			
Pro			, 115	, ,,	niu	205	5				206	0						
	205		. 01-		Glu	Luc	. T.ess	Ara	Pro	Gli	ı Pro	Arc	Arg	Asp	Gly			
		s ser	GII	GIU	207	בעם	Deu			20	75				2080			
206	55				207			The	. G1r	Dro	. J.e.	ı Sei	Sei	Pro	Pro			
Glı	ı Ala	Glr	ı Glu	ı Ala	ATA	ser	GIL	LILL	209					209	Pro			
				208	5		_				- 601	- x1.	. G17		_			
Thi	r Ala	a Ala	a Ser	c Ser	Lys	A La	Pro	ser	. Sei	GI	y ser	. Ali	213		Pro			
			210	00				210)5	_					- 72-0			
Gl	ı Gly	/ His	s Pro	Gly	, Lys	Pro	Gli	Pro	Sei	c Ar	g Ala	т пА:	5 5EI	, WL	Pro			
		211	15				212	20				21.	25					
Lei	ı Pro) Ası	n Met	t Pro	Lys	Lev	ı Val	. Ile	Pro	se:	r Ala	a Ala	a Thi	r Lys	s Phe			
	211	2 ^				213	35				214	4 O						
Pro	o Pro	o Glu	ı Ile	e Thr	. Val	Thr	Pro	Pro	Th	r Pr	o Th	r Le	ı Le	ı Se:	r Pro			

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tgccaggagg tcctgcacca catcagtatg attcctgcca aatgccttca ggaaggggct
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gaagetgaag agcaeggtee eccaggagge ageteaggat aggtggtatg gagetgtgee
gaggettggg eteccacata ageactagte tatagatgee tettaggaet ggtgeetgge
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Glu Glu Leu Cys Thr Pro Pro Asp Pro Gly Ala Ala Phe Val Val Val
                          40
Glu Cys Pro Asp Glu Ser Phe Ile Gln Pro Ile Cys Glu Asn Ala Thr
                      55
Phe Gln Arg Tyr Gln Gly Lys Ala Asp Ala Pro Val Ala Leu Val Val
                   70
                                     75
His Met Ala Pro Ala Ser Val Leu Val Asp Ser Arg Tyr Gln Gln Trp
                                  90
              85
Met Glu Arg Phe Gly Pro Asp Thr Gln His Leu Val Leu Asn Glu Asn
                              105
           100
Cys Ala Ser Val His Asn Leu Arg Ser His Lys Ile Gln Thr Gln Leu
                          120
       115
Asn Leu Ile His Pro Asp Ile Phe Pro Leu Leu Thr Ser Phe Arg Cys
                      135
                                          140
Lys Lys Glu Gly Pro Thr Leu Ser Val Pro Met Val Gln Gly Glu Cys
        150
                                      155
Leu Leu Lys Tyr Gln Leu Arg Pro Arg Arg Glu Trp Gln Arg Asp Ala
              165
                                  170
Ile Ile Thr Cys Asn Pro Glu Glu Phe Ile Val Glu Ala Leu Gln Leu
          180
                             185
Pro Asn Phe Gln Gln Ser Val Gln Glu Tyr Arg Arg Ser Ala Gln Asp
                          200
                                              205
    195
Gly Pro Ala Pro Ala Glu Lys Arg Ser Gln Tyr Pro Glu Ile Ile Phe
                                         220
                      215
Leu Gly Thr Gly Ser Ala Ile Pro Met Lys Ile Arg Asn Val Ser Ala
                                      235
                230
Thr Leu Val Asn Ile Ser Pro Asp Thr Ser Leu Leu Leu Asp Cys Gly
                                  250
               245
Glu Gly Thr Phe Gly Gln Leu Cys Arg His Tyr Gly Asp Gln Val Asp
                             265
           260
 Arg Val Leu Gly Thr Leu Ala Ala Val Phe Val Ser His Leu His Ala
                          280
                                              285
 Asp His His Thr Gly Leu Pro Ser Ile Leu Leu Gln Arg Glu Arg Ala
                                          300
                      295
 Leu Ala Ser Leu Gly Lys Pro Leu His Pro Leu Leu Val Val Ala Pro
                   310
                                     315
 Asn Gln Leu Lys Ala Trp Leu Gln Gln Tyr His Asn Gln Cys Gln Glu
                                  330
                325
 Val Leu His His Ile Ser Met Ile Pro Ala Lys Cys Leu Gln Glu Gly
                               345
 Ala Glu Ile Ser Ser Pro Ala Val Glu Arg Leu Ile Ser Ser Leu Leu
                                              365
                           360
 Arg Thr Cys Asp Leu Glu Glu Phe Gln Thr Cys Leu Val Arg His Cys
                       375
 Lys His Ala Phe Gly Cys Ala Leu Val His Thr Ser Gly Trp Lys Val
                                       395
             390
 Val Tyr Ser Gly Asp Thr Met Pro Cys Glu Ala Leu Val Arg Met Gly
                                  410
 Lys Asp Ala Thr Leu Leu Ile His Glu Ala Thr Leu Glu Asp Gly Leu
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420

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Glu Glu Glu Ala Val Glu Lys Thr His Ser Thr Thr Ser Gln Ala Ile
                            440
Ser Val Gly Met Arg Met Asn Ala Glu Phe Ile Met Leu Asn His Phe
                                             460
                        455
Ser Gln Arg Tyr Ala Lys Val Pro Leu Phe Ser Pro Asn Phe Ser Glu
                                        475
                    470
Lys Val Gly Val Ala Phe Asp His Met Lys Val Cys Phe Gly Asp Phe
                                    490
                485
Pro Thr Met Pro Lys Leu Ile Pro Pro Thr Glu Ser Pro Val Cys Trp
                                505
            500
Arg His Arg Gly Asp Gly Gly Ala Gln Gly Glu Ala Gly Ala Ala Ala
                            520
        515
Gly Ala Gly Gly Pro Pro Val Gln Gly Ala Gly Arg Arg Pro Gly Gly
                        535
Trp Gly Ala Ser Ala Glu Ala Gly Pro His Arg Gly Ala Thr Gly Gln
                                         555
                    550
Glu Gly Gln Ser Pro Val Lys Ile Trp Glu Thr Leu Asn Ser Glu Gly
                                    570
                565
Cys Val Ser Ser Ala Pro Arg Thr His Pro Tyr Leu Pro Ser Leu Leu
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            580
Val Glu Ala Glu Glu His Gly Pro Pro Gly Gly Ser Ser Gly
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gtcatggcca ccgaccagga ctcctactcc accagcagca cggaggagga gctggagcag
 ttcagcagcc ccagcgtgaa gaagaagccc tccatgatcc tgggcaaggc tcggcaccgg
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 ctgagetttg ccagtttcag cagcatgttc cacgetttee tetecaacaa cegcaagetg
 tacaagaagg tggtggagct ggcgcaggac aagggctcgt actttggcag cctggtgcag
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 geettgtaca aatgtgteet gaageeectg aaggaageea teaacteatg eetgeateag
 atccacagca aggatggttc gctgcagcag ctcaaggaga accagttagt gatcctggcc
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atcctgcaga agttcaccag catgcacaag gcctactcac ctgagaagaa gatctccatc
ctgctcaaga cctgcaaact catctacgac tccatggccc tcggcaaccc agggaagccc
840
tatggggcgg atgacttcct gcctgtgctc atgtatgtgc tggcccgcag caacctcacg
900
gagatgette teaatgtgga gtacatgatg gageteatgg acceegeest geagetgggg
gagggtteet actatetgae caccacetae ggggeeetgg ageacateaa gagetacgae
aagatcacgg tgacccggca gctgagtgtg gaggtgcagg actccatcca ccgctgggag
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Leu Ser Asp Ser Leu Gly Val Ser Val Met Ala Thr Asp Gln Asp Ser
Tyr Ser Thr Ser Ser Thr Glu Glu Glu Leu Glu Gln Phe Ser Ser Pro
                         55
Ser Val Lys Lys Lys Pro Ser Met Ile Leu Gly Lys Ala Arg His Arg
                                        75
                    70
Leu Ser Phe Ala Ser Phe Ser Ser Met Phe His Ala Phe Leu Ser Asn
                                     90
Asn Arg Lys Leu Tyr Lys Lys Val Val Glu Leu Ala Gln Asp Lys Gly
            100
Ser Tyr Phe Gly Ser Leu Val Gln Asp Tyr Lys Val Tyr Ser Leu Glu
                                                 125
                             120
Met Met Ala Arg Gln Thr Ser Ser Thr Glu Met Leu Gln Glu Ile Arg
                         135
Thr Met Met Thr Gln Leu Lys Ser Tyr Leu Leu Gln Ser Thr Glu Leu
                                         155
                     150
Lys Ala Leu Val Asp Pro Ala Leu His Ser Glu Glu Glu Leu Glu Ala
                                     170
 Ile Val Glu Ser Ala Leu Tyr Lys Cys Val Leu Lys Pro Leu Lys Glu
                                 185
             180
 Ala Ile Asn Ser Cys Leu His Gln Ile His Ser Lys Asp Gly Ser Leu
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                             200
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 Gln Gln Leu Lys Glu Asn Gln Leu Val Ile Leu Ala Thr Thr Thr Thr
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 Asp Leu Gly Val Thr Thr Ser Val Pro Glu Val Pro Met Met Glu Lys
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240
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Ile Leu Gln Lys Phe Thr Ser Met His Lys Ala Tyr Ser Pro Glu Lys
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Lys Ile Ser Ile Leu Leu Lys Thr Cys Lys Leu Ile Tyr Asp Ser Met
                                265
Ala Leu Gly Asn Pro Gly Lys Pro Tyr Gly Ala Asp Asp Phe Leu Pro
                            280
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Val Leu Met Tyr Val Leu Ala Arg Ser Asn Leu Thr Glu Met Leu Leu
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                                            300
Asn Val Glu Tyr Met Met Glu Leu Met Asp Pro Ala Leu Gln Leu Gly
                                        315
                    310
Glu Gly Ser Tyr Tyr Leu Thr Thr Thr Tyr Gly Ala Leu Glu His Ile
                                    330
                325
Lys Ser Tyr Asp Lys Ile Thr Val Thr Arg Gln Leu Ser Val Glu Val
                                345
            340
Gln Asp Ser Ile His Arg Trp Glu Arg Arg Arg Thr Leu Asn Lys Ala
                            360
Arg Ala Ser Arg Ser Ser Val Gln Asp Phe Ile Cys Val Ser Tyr Leu
                        375
Glu Pro Glu Gln Gln Ala Arg Thr Leu Ala Ser Arg Ala Asp Thr Gln
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ctgtatcatc ggagttttgg accaatcgaa tacaaaggcc cccatgagtg ctgtttacat
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 Ala Lys Pro Pro Val Ser Phe Phe Ser Leu Arg Ser Pro Val Leu Asp
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 Leu Phe Gln Gly Gln Leu Asp Tyr Ala Glu Tyr Val Arg Arg Asp Ser
                                       75
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 Glu Val Val Leu Leu Phe Phe Tyr Ala Pro Trp Cys Gly Gln Ser Ile
                                    90
 Ala Ala Arg Ala Glu Ile Glu Gln Ala Ala Ser Arg Leu Ser Asp Gln
                                105
            100
 Val Leu Phe Val Ala Ile Asn Cys Trp Trp Asn Gln Gly Lys Cys Arg
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 Lys Gln Lys His Phe Phe Tyr Phe Pro Val Ile Tyr Leu Tyr His Arg
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Pro Lys Met Thr Arg Ser Lys Leu Lys Glu Val Val Glu Lys Gly Met
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Val Ile Pro Thr Trp Asn Ile Ser Pro Ile Lys Lys Ala Asn Glu Ile
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Lys Pro Pro Gln Phe Val Asp Ile His Leu Glu Glu Asp Asp Ser Ser
                                    90
Asp Glu Glu Tyr Gln Pro Asp Asp Glu Glu Glu Asp Glu Thr Ala Glu
            100
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Glu Ser Leu Leu Glu Ser Asp Val Glu Ser Thr Ala Ser Ser Pro Arg
                                                 125
                            120
Gly Ala Lys Lys Ser Arg Leu Arg Gln Ser Ser Glu Met Thr Glu Thr
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                        135
Asp Glu Glu Ser Gly Ile Leu Ser Glu Ala Glu Lys Val Thr Thr Pro
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                    150
Ala Ile Arg His Ile Ser Ala Glu Val Val Pro Met Gly Pro Pro Pro
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                165
Pro Pro Lys Pro Lys Gln Thr Arg Asp Ser Thr Phe Met Glu Lys Leu
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His Ala Val Asp Glu Glu Leu Ala Ser Ser Pro Val Cys Met Asp Ser
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Phe Gln Pro Met Asp Asp Ser Leu Ile Ala Phe Arg Thr Arg
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gateeggaga eggaaatgte egaaggeege agtaettgae eetgtatttt gggagtegaa
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 300
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1740 actcctgagg	atgctcaago	: agtaataaat	gcctatacag	aaattaacaa	gaaacactgc
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1920					•

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accaaagctg aaaagattag actggcaaag actcaacaag cgagtaaaca tataagattt
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Glu Lys Asp Thr Gly Asp Leu Lys Asp Ser Ser Leu Leu Lys Thr Lys
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Arg Lys His Lys Lys Lys His Lys Glu Arg His Lys Met Gly Glu Glu
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                   70
Val Ile Pro Leu Arg Val Leu Ser Lys Ser Glu Trp Met Asp Leu Lys
                                   90
Lys Glu Tyr Leu Ala Leu Gln Lys Ala Ser Met Ala Ser Leu Lys Lys
                               105
            100
Thr Ile Ser Gln Ile Lys Ser Glu Ser Glu Met Glu Thr Asp Ser Gly
                           120
Val Pro Gln Asn Thr Gly Met Lys Asn Glu Lys Thr Ala Asn Arg Glu
                       135
Glu Cys Arg Thr Gln Glu Lys Val Asn Ala Thr Gly Pro Gln Phe Val
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Ser Gly Val Ile Val Lys Ile Ile Ser Thr Glu Pro Leu Pro Gly Arg
                                   170
               165
Lys Gln Val Arg Asp Thr Leu Ala Ala Ile Ser Glu Val Leu Tyr Val
                               185
            180
Asp Leu Leu Glu Gly Asp Thr Glu Cys His Ala Arg Phe Lys Thr Pro
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Glu Asp Ala Gln Ala Val Ile Asn Ala Tyr Thr Glu Ile Asn Lys Lys
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                                           220
His Cys Trp Lys Leu Glu Ile Leu Ser Gly Asp His Glu Gln Arg Tyr
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Trp Gln Lys Ile Leu Val Asp Arg Gln Ala Lys Leu Asn Gln Pro Arg
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Glu Lys Lys Arg Gly Thr Glu Lys Leu Ile Thr Lys Ala Glu Lys Ile
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Arg Leu Ala Lys Thr Gln Gln Ala Ser Lys His Ile Arg Phe Ser Glu
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Met Gln Ala Ser Val Pro Gly Pro Ser Glu Glu Pro Val Val Tyr Asn
Pro Thr Thr Ala Ala Phe Ile Cys Asp Ser Leu Val Asn Glu Lys Thr
Ile Gly Ser Pro Pro Asn Glu Phe Tyr Cys Ser Glu Asn Thr Ser Val
Pro Asn Glu Ser Asn Lys Ile Leu Val Asn Lys Asp Val Pro Gln Lys
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90
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Pro Gly Gly Glu Thr Thr Pro Ser Val Thr Asp Leu Leu Asn Tyr Phe
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Leu Ala Pro Glu Ile Leu Thr Gly Asp Asn Gln Tyr Tyr Cys Glu Asn
                                                125
                            120
Cys Ala Ser Leu Gln Asn Ala Glu Lys Thr Met Gln Ile Thr Glu Glu
                        135
    130
Pro Glu Tyr Leu Ile Leu Thr Leu Leu Arg Phe Ser Tyr Asp Gln Lys
                    150
                                        155
Tyr His Val Arg Arg Lys Ile Leu Asp Asn Val Ser Leu Pro Leu Val
                                    170
Leu Glu Leu Pro Val Lys Arg Ile Thr Ser Phe Ser Ser Leu Ser Glu
                                185
Ser Trp Ser Val Asp Val Asp Phe Thr Asp Leu Ser Glu Asn Leu Ala
                                                 205
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Lys Lys Leu Lys Pro Ser Gly Thr Asp Glu Ala Ser Cys Thr Lys Leu
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Val
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 ctgagcacet cteggetgee gaaggacaag eccegatate tgatgggggt tggetatgee
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gtggagaage getteeegga ettegtgegg gaetteatgg gegeeatgta eggggateee
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Val Ala Thr Pro Val Phe Met Pro Val Gly Thr Gln Ala Thr Met Lys
                        55
Gly Ile Thr Thr Glu Gln Leu Asp Ala Leu Gly Cys Arg Ile Cys Leu
                                      √ 75
                    70
Gly Asn Thr Tyr His Leu Gly Leu Arg Pro Gly Pro Glu Leu Ile Gln
                                    90
Lys Ala Asn Gly Leu His Gly Phe Met Asn Trp Pro His Asn Leu Leu
                                105
 Thr Leu Cys Gly Gly Val Ser Leu Asp Ser Gly Gly Phe Gln Met Val
                                               125
                            120
        115
 Ser Leu Val Ser Leu Ser Glu Val Thr Glu Glu Gly Val Arg Phe Arg
                                            140
                        135
 Ser Pro Tyr Asp Gly Asn Glu Thr Leu Leu Ser Pro Glu Lys Ser Val
                                        155
 Gln Ile Gln Asn Ala Leu Gly Ser Asp Ile Ile Met Gln Leu Asp Asp
                                    170
                165
 Val Val Ser Ser Thr Val Thr Gly Pro Arg Val Glu Glu Ala Met Tyr
                                185
 Arg Ser Ile Arg Trp Leu Asp Arg Cys Ile Ala Ala His Gln Arg Pro
                            200
 Asp Lys Gln Asn Leu Phe Ala Ile Ile Gln Gly Gly Leu Asp Ala Asp
                                           . 220
                        215
 Leu Arg Ala Thr Cys Leu Glu Glu Met Thr Lys Arg Asp Val Pro Gly
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230

225

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Phe Ala Ile Gly Gly Leu Ser Gly Gly Glu Ser Lys Ser Gln Phe Trp
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Arg Met Val Ala Leu Ser Thr Ser Arg Leu Pro Lys Asp Lys Pro Arg
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Tyr Leu Met Gly Val Gly Tyr Ala Thr Asp Leu Val Val Cys Val Ala
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                            280
Leu Gly Cys Asp Met Phe Asp Cys Val Phe Pro Thr Arg Thr Ala Arg
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Phe Gly Ser Ala Leu Val Pro Thr Gly Asn Leu Gln Leu Arg Lys Lys
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                    310
Val Phe Glu Lys Asp Phe Gly Pro Ile Asp Pro Glu Cys Thr Cys Pro
                                    330
                325
Thr Cys Gln Lys His Ser Arg Ala Phe Leu His Ala Leu Leu His Ser
                                345
Asp Asn Thr Ala Ala Leu His His Leu Thr Val His Asn Ile Ala Tyr
                            360
Gln Leu Gln Leu Met Ser Ala Val Arg Thr Ser Ile Val Glu Lys Arg
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Phe Pro Asp Phe Val Arg Asp Phe Met Gly Ala Met Tyr Gly Asp Pro
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agagettece ccateceegg caegeeegae eggetgeegt gecaacaget getecageag
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ageteaceca geaaceagte atectecage gaccetggae eeggegggag eggaceetgg
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 agttgeteca gteactecag cagcaacaeg etetecagea acaeetecag caacagtgae
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Thr Pro Ala Leu Gln Pro Leu Ser Arg Ala Ser Pro Ile Pro Gly Thr
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Pro Asp Arg Leu Pro Cys Gln Gln Leu Leu Gln Gln Ala Gln Ala Ala
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                                             60
Ile Pro Arg Ser Thr Ser Phe Asp Arg Lys Leu Pro Asp Gly Thr Arg
                                         75
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Ser Ser Pro Ser Asn Gln Ser Ser Ser Ser Asp Pro Gly Pro Gly Gly
                                     90
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Ser Gly Pro Trp Arg Pro Gln Val Gly Tyr Asp Gly Cys Gln Ser Pro
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                                 105
Leu Leu Leu Glu His Gln Gly Ser Gly Pro Leu Glu Cys Asp Gly Ala
                                                 125
        115
                             120
Arg Glu Arg Glu Asp Thr Met Glu Ala Ser Arg His Pro Glu Thr Lys
                        135
    130
Trp His Gly Pro Pro Ser Lys Val Leu Gly Ser Tyr Lys Glu Arg Ala
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                    150
145
Leu Gln Lys Asp Gly Ser Cys Lys Asp Ser Pro Asn Lys Leu Ser His
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PCT/US00/08621 WO 00/58473

170

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165
Ile Gly Asp Lys Ser Cys Ser Ser His Ser Ser Ser Asn Thr Leu Ser
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Ser Asn Thr Ser Ser Asn Ser Asp Asp Lys His Phe Gly Ser Gly Asp
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Leu Met Asp Pro Glu Leu Leu Gly Leu Thr Tyr Ile Lys Gly Ala Ser
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Thr Asp Ser Gly Ile Asp Thr Ala Pro Cys Met Pro Ala Thr Ile Leu
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                                        235
Gly Pro Val His Leu Ala Gly Ser Arg Ser Leu Ile His Ser Arg Ala
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                245
Glu Gln Trp Ala Asp Ala Ala Asp Val Ser Gly Pro Asp Asp Glu Pro
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Ala Lys Leu Tyr Ser Val His Gly Tyr Ala Ser Thr Ile Ser Ala Gly
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Ser Ala Ala Glu Gly Ser Met Gly Asp Leu Ser Glu Ile Ser Ser His
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Ser Ser Gly Ser His His Ser Gly Ser Pro Ser Ala His Cys Ser Lys
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Ser Ser Gly Ser Leu Asp Ser Ser Lys Val Tyr Ile Val Ser His Ser
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Ser Gly Gln Gln Val Pro Gly Ser Met Ser Lys Pro Tyr His Arg Gln
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Gly Ala Val Asn Lys Tyr Val Ile Gly Trp Lys Lys Ser Glu Gly Ser
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Pro Pro Pro Glu Glu Pro Glu Val Thr Glu Cys Pro Gly Met Tyr Ser
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Glu Leu Asp Val Met Ser Thr Ala Thr Gln His Gln Thr Val Val Gly
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Asp Ala Val Ala Glu Thr Gln His Val Leu Ser Lys Glu Asp Phe Leu
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Lys Leu Met Leu Pro Asp Ser Pro Leu Val Glu Glu Gly Arg Arg Lys
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Phe Ser Phe Tyr Gly Asn Leu Ser Pro Arg Arg Ser Leu Tyr Arg Thr
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Ser Ser Arg Ser Ser Val Leu Asp Gln
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240
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gettetggge tetaacetgg gagactegea tecagecegg eggaagetae agtetetace
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Asn Arg Arg Met Lys Trp Lys Lys Ile Val Leu Gln Gly Gly Leu
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Glu Ser Pro Thr Lys Pro Lys Gly Arg Pro Lys Lys Asn Ser Ile Pro
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Thr Ser Glu Gln Leu Thr Glu Gln Glu Arg Ala Lys Asp Ala Glu Lys
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Pro Ala Glu Val Pro Gly Glu Pro Ser Asp Arg Ser Arg Glu Asp
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240
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Val Ala Trp Asp Tyr Gly Arg Leu Ala Leu Val Thr Asp Ala Asp Arg
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Leu Arg Arg Gln Glu Arg Asp Arg Val Glu Gln Glu Tyr Val Ala Ser
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Ala Met His Gly Asp Ser His Asp Arg Tyr Glu Arg Leu Thr Phe Val
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Ser Ser Ser Val Asp Phe Asp Gln Arg Asp Asn Gly Phe Cys Ser Trp
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Leu Thr Ala Ile Phe Arg Ile Lys Asp Asp Glu Ile Arg Asp Lys Cys
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Gly Gly Asp Ala Val His Tyr Leu Ser Phe Gln Arg His Ile Ile Gly
                                         140
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Leu Leu Val Val Val Gly Val Leu Ser Val Gly Ile Val Leu Pro Val
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                                     155
Asn Phe Ser Gly Asp Leu Leu Glu Asn Asn Ala Tyr Ser Phe Gly Arg
                                 170
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Thr Thr Ile Ala Asn Leu Lys Ser Gly Asn Asn Leu Leu Trp Leu His
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Thr Ser Phe Ala Phe Leu Tyr Leu Leu Leu Thr Val Tyr Ser Met Arg
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                          200
Arg His Thr Ser Lys Met Arg Tyr Lys Glu Asp Asp Leu Val Lys Arg
                                         220
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Thr Leu Phe Ile Asn Gly Ile Ser Lys Tyr Ala Glu Ser Glu Lys Ile
                                      235
                   230
Lys Lys His Phe Glu Glu Ala Tyr Pro Asn Cys Thr Val Leu Glu Ala
                                  250
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Arg Pro Cys Tyr Asn Val Ala Arg Leu Met Phe Leu Asp Ala Glu Arg
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Lys Lys Ala Glu Arg Gly Lys Leu Tyr Phe Thr Asn Leu Gln Ser Lys
                           280 -
Glu Asn Val Pro Thr Met Ile Asn Pro Lys Pro Cys Gly His Phe Cys
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                                          300
Cys Cys Val Val Arg Gly Cys Glu Gln Val Glu Ala Ile Glu Tyr Tyr
                                      315
                  310
Thr Lys Leu Glu Gln Lys Leu Lys Glu Asp Tyr Lys Arg Glu Lys Gly
                                  330
               325
Lys Val Asn Glu Lys Pro Leu Gly Met Ala Phe Val Thr Phe His Asn
                              345
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Glu Thr Ile Thr Ala Ile Ile Leu Lys Asp Phe Asn Val Cys Lys Cys
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                           360
Gln Gly Cys Thr Cys Arg Gly Glu Pro Arg Pro Ser Ser Cys Ser Glu
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Ser Leu His Ile Pro Asn Trp Thr Gly Ser Tyr Ala Pro Asp Pro Gln
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Asn Ile Tyr Trp Glu His Leu Ser Ile Arg Gly Phe Ile Trp Trp Leu
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                                  410
Arg Cys Leu Val Ile Asn Val Val Leu Phe Ile Leu Leu Phe Phe Leu
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Val Thr Cys Leu Gln Trp Pro Ala Glu Tyr Ile Ile Val Phe Gly Leu
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Ala Glu Gly Lys Val Arg Leu Ala Asn Thr Lys Thr Asn Lys Ser Ser
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Thr Ile Tyr Gly Thr Glu Ser Tyr Val Val Ser Leu Thr Thr Asn Cys
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Ser Gly Lys Gly Ile Leu Ser Gly His Ala Asp Gly Thr Ile Val Arg
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Tyr Phe Phe Asp Asp Glu Gly Ser Gly Glu Ser Gln Gly Lys Leu Val
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His Met Leu Gln Thr Phe Asp Tyr Ser Arg Asp Pro Gln Glu Arg Glu
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Phe Thr Thr Ala Val Ser Ser Pro Gly Gly Gln Ser Val Val Leu Gly
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Cys Gly Gly Val Glu Gln Phe Asp Cys Cys Leu Arg Arg Ser Ile Tyr
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Thr Ile Ala Ile Val Asp Leu Ile Gly Gly Tyr Asn Ile Gly Thr Val
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Lys Leu Leu Phe Arg Asp Arg Lys Leu Arg Leu His Leu Tyr Asp Ile
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Ser Ile Lys Ala Ile Glu Ala Ala Leu Gly Ala Arg Gln Trp Lys Lys
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Ala Ile Tyr Ile Leu Asp Leu Gln Asp Arg Asn Thr Ala Ser Lys Tyr
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Tyr Pro Leu Val Ala Gln His Tyr Ala Ser Leu Gln Glu Tyr Glu Ile
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Ala Glu Glu Leu Tyr Thr Lys Gly Asp Arg Thr Lys Asp Ala Ile Asp
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945					950					955				Pro	960
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_		•	980					985					990	Glu	
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	101	0				1015	5				1020)		His	
		Leu	Trp	Ala			Leu	GIA	GTA	1035	Ala	Ala	vai	Arg	1040
102	7 ~~	T ***	T AU	Glv	1030		Glu	Ala	Ala			His	Ala	Ala	
Leu	ASII	БÅЗ	Den	104		200			1050					1055	
Asn	Cys	Ser	Phe	Glu		Ala	Phe	Glu 106		Ser	Arg	Leu	Ala 1076	Leu D	Lys
His	Lys	Thr 107		Glu	Val	His	Leu 108		Tyr	Ala	Met	Phe 108	Leu 5	Glu	Asp
61	Gly	Tve	Dhe	Glu	G111	Ala	Glu	Ala	G111	Phe	Tle	Ara	Ala	Glv	Lys
GIU	_	_	FIIE	GIU	GIU			AIG	014		110				•
	109	0				109	5				110)			
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Pro 1100 Ala Leu Ala Tyr Asp 118 Glu	109 Lys Gln Val Glu Tyr 117 Tyr Ala	Glu Arg Gly Gly 115 Lys Val Thr	Ala Val Gln 114 Leu 5 Glu Pro Lys Trp 122	Val Ala 1129 Ala 0 Leu Ala Ser Lys 120 Glu 0	Leu 1110 Glu 5 Arg Leu Gly Gln 119 Gly 5	1099 Met O Ala Gly Arg Leu 1179 Leu O Ala Ala	Phe His Ala Ala 116 Trp Glu Arg	Val Asp Leu 114 Gln O Ser Ala Gly Glu 122	His Pro 113 Glu Arg Asp Leu Val 121 Tyr	Asn 111! Asp 0 Glu Pro Ala Gln 119: Glu 0 Ser	Gln Ser Lys Gly Leu 118 Glu 5 Gly Arg	Asp Val Asp Leu 116 Arg Glu Phe Ala	Trp Ala Phe 115 Ala 5 Ile Tyr Val Val 123	Glu 113: Gln 0 Leu Cys Glu 121: Asp	Ala 1120 Val 5 Lys Asn Lys Arg 1200 Gln 5 Cys
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Ara	Val	Ala			Leu	asp	Pro	Arg	Tyr	Glu	Asp	Tyr	Val	Asp	Gln
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His	Tvr	Lvs	Glu	Phe	Leu	Lvs	Asn	Gln	Gly	Lys	Val	Asp	Ser	Leu	Val
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Glv	Val) Aen	Va 1	T1e	Δla			Asp	Leu	Tvr	Val	Glu	Gln	Gly	Gln
1345		nop	Vul		1350					1355				•	1360
Total	700	Lare	Cve	Tla			Ala	Thr	Lvs			Tvr	Lvs	Ile	Leu
пр	ASP	шуз	Cys	1365			•		1370			- 2 -		1375	j
***	7	т	V-1	7303	, Tan	ጥኒም	Δla	Thr			Ile	Ara	Glu	Gly	Ser
urs	Lys	TYL	1380		Deu	-7-		1385				3	1390		
C	210	d1 m			λla	Len	ጥኒም			His	Glv	Ala		Ala	Asn
ser	ATA			ьеu	ALG	neu	1400				0_1	1405			
	~ 1	1399	D)		T1.	m			Tla	Dhe	Thr			Val	Ser
Pro			Pne	ASI	TTE	1415		AIG		FILE	1420				
_	1410) 			~			21-					λla	Aen	T.e.11
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1425	5		_		1430			**- 1	T			Co*	802	Cor	_
Arg	Asp	Val	Leu			Leu					PIO	ser	261	Ser 1455	
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Lys	Thr	Trp			Ser	Glu	Ala			Pro	AIA	H15	GIU	Glu	Pne
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Lys	Thr	Met	Leu	Leu	Ile	Ala			Tyr	Ala	Thr			Ala	AIA
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Gln	Ser	Val	Lys	Gln	Leu			Val	Ala	Ala			Ser	Val	Ser
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		Pro	Leu	Pro	Ala	Lys	1560)				1565	5		Glu
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Glu	157	D	Leu			157	1560 Gln 5) His	Val	Pro	Glu 1580	1569 Ala)	Glu	Arg	
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Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Phe His Val Phe Arg
Thr Ser Cys Asn Leu Lys Ser His Lys Arg Ile His Thr Gly Glu Asn
His His Glu Cys Asn Gln Cys Gly Lys Ala Phe Ser Thr Arg Ser Ser
Leu Thr Gly His Asn Cys Ile His Thr Gly Glu Lys Pro Tyr Glu Cys
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Lys Glu Cys Gly Lys Thr Phe Met Tyr Asn Ser Ser Leu Ile Gln His
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Leu Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Glu Cys Gly
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Lys Ala Phe Arg Gln His Ser His Leu Val Thr His Gln Lys Ile His
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Thr Gly Glu Lys Pro Tyr Gln Cys Thr Glu Cys Gly Lys Ala Phe Arg
                    150
                                         155
Arg Arg Ser Leu Leu Ile Gln His Arg Arg Ile His Ser Gly Glu Lys
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                                    170
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Pro Tyr Glu Cys Lys Glu Cys Gly Lys Leu Phe Ile Trp Arg Thr Ala
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Phe Leu Lys His Gln Ser Leu His Ala Gly Glu Lys Leu Glu Glu Cys
                            200
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Glu Lys Xaa Pro Ser Ala Arg Met Arg Ser Leu Gly Glu Xaa Gln Lys
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Ile His Gln Glu Glu Lys Ala Tyr Trp Cys Asn Gln Cys Gly Arg Ala
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                    230
Phe Gln Gly Ser Ser Asp Leu Ile Gly His Gln Val Thr His Thr Gly
                                    250
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Glu Lys Pro Tyr Glu Cys Lys Glu Cys Gly Xaa Thr Phe Asn Gln Ser
                                                     270
                                265
            260
Ser Asp Leu Leu Arg His His Arg Ile His Ser Gly Glu Lys Pro Tyr
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                                                 285
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Val Cys Asn Lys Cys Gly Lys Ser Phe Arg Gly Ser Ser Asp
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ctccctgttc tgatattgat cgtgaagaag acctgtggaa ataagagttc agtgaattct
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acagtettgg tgaagaacae gaagaagaet aatecagaga tgaaagaaaa accetgecat
660
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Lys Glu Leu Met Val His Val Gly Gly Leu Ile Gln Met Gly Cys Val
                           40
Phe Gln Ser Thr Glu Val Lys His Val Thr Lys Val Glu Trp Ile Phe
                                            60
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Ser Gly Arg Arg Ala Lys Glu Glu Ile Val Phe Arg Tyr Tyr His Lys
                    70
Leu Arg Met Ser Ala Glu Tyr Ser Gln Ser Trp Gly His Phe Gln Asn
                                    90
Arg Val Asn Leu Val Gly Asp Ile Phe Arg Asn Asp Gly Ser Ile Met
                                105
          - 100
Leu Gln Gly Val Arg Glu Ser Asp Gly Gly Asn Tyr Thr Cys Ser Ile
                            120
His Leu Gly Asn Leu Val Phe Lys Lys Thr Ile Val Leu His Val Ser
                        135
                                            140
Pro Glu Glu Pro Arg Thr Leu Val Thr Pro Ala Ala Leu Arg Pro Leu
                                        155
                   150
Val Leu Gly Gly Asn Gln Leu Val Ile Ile Val Gly Ile Val Cys Ala
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Thr Ile Leu Leu Pro Val Leu Ile Leu Ile Val Lys Lys Thr Cys
                               185
           180
Gly Asn Lys Ser Ser Val Asn Ser Thr Val Leu Val Lys Asn Thr Lys
                                                205
                           200
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Lys Thr Asn Pro Glu Met Lys Glu Lys Pro Cys His Phe Glu Arg Cys
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Glu Gly Glu Val Asn Thr Arg Phe Ser Leu Lys His
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Arg Gly Pro His Leu Leu Leu Leu His Ala Ala Ala Gly Ala Ala
Val Arg Gly Ala Gln Arg Gly Gln His Ala Gly Arg Ala His Ser Ala
Ala Glu Asp Asp Ala Val Pro Gly Ala Gln Ser Arg His Arg Gln Cys
                    70
Gly Gly Pro Cys Trp Arg Ala Pro Pro Thr Trp Arg Cys Ser Gly Thr
                                    90
Ala Val Ser Arg Pro Ser Ser Ser Ala Lys Thr Trp Trp Arg Ser Pro
            100
                                105
Pro Arg Pro Ala Pro Xaa Pro Gly Val Pro Pro Pro Gly Ala Arg Leu
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125
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                            120
Pro Xaa Pro Pro Ala Leu Ser Leu Glu Leu Gln Pro Pro Pro Pro Gln
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Arg Asn Ser Val Pro Pro Pro Pro Pro Leu His Gly Pro Pro Gly
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145
                    150
Xaa Pro Pro His Val Leu Ala His Ala
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1200
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Ala Lys Glu Leu Ala Arg Ile Glu Glu Phe Lys Lys Glu Glu Met Arg
                          40
Lys Leu Gln Lys Glu Arg Lys Val Phe Glu Lys Tyr Thr Thr Ala Ala
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Arg Thr Phe Pro Asp Lys Lys Glu Arg Glu Glu Ile Gln Thr Leu Lys
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Gln Gln Ile Ala Asp Leu Arg Glu Asp Leu Lys Arg Lys Glu Thr Lys
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Trp Ser Ser Thr His Ser Arg Leu Arg Ser Gln Ile Gln Met Leu Val
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Arg Glu Asn Thr Asp Leu Arg Glu Glu Ile Lys Val Met Glu Arg Phe
                          120
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Arg Leu Asp Ala Trp Lys Arg Ala Glu Ala Ile Glu Ser Ser Leu Glu
                       135
Val Glu Lys Lys Asp Lys Leu Ala Asn Thr Ser Val Arg Phe Gln Asn
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Ser Gln Ile Ser Ser Gly Thr Gln Val Glu Lys Tyr Lys Lys Asn Tyr
              165
                                 170
Leu Pro Met Gln Gly Asn Pro Pro Arg Arg Ser Lys Ser Ala Pro Pro
                                                 190
                              185
           180
Arg Asp Leu Gly Asn Leu Asp Lys Gly Gln Ala Ala Ser Pro Arg Glu
                          200
Pro Leu Glu Pro Leu Asn Phe Pro Asp Pro Glu Tyr Lys Glu Glu Glu
                                         220
                       215
Glu Asp Gln Asp Ile Gln Gly Glu Ile Ser His Pro Asp Gly Lys Val
                                     235
                  230
Glu Lys Val Tyr Lys Asn Gly Cys Arg Val Ile Leu Phe Pro Asn Gly
                                  250
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Thr Arg Lys Glu Val Ser Ala Asp Gly Lys Thr Ile Thr Val Thr Phe
                              265
           260
Phe Asn Gly Asp Val Lys Gln Val Met Pro Asp Gln Arg Val Ile Tyr
                                            285
                          280
Tyr Tyr Ala Ala Ala Gln Thr Thr His Thr Thr Tyr Pro Glu Gly Leu
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                       295
Glu Val Leu His Phe Ser Ser Gly Gln Ile Glu Lys His Tyr Pro Asp
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305
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Gly Arg Lys Glu Ile Thr Phe Pro Asp Gln Thr Val Lys Asn Leu Phe
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Pro Asp Gly Gln Glu Glu Ser Ile Phe Pro Asp Gly Thr Ile Val Arg
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Val Gln Arg Asp Gly Asn Lys Leu Ile Glu Phe Asn Asn Gly Gln Arg
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Glu Leu His Thr Ala Gln Phe Lys Arg Arg Glu Tyr Pro Asp Gly Thr
                                             380
                        375
Val Lys Thr Val Tyr Ala Asn Gly His Gln Glu Thr Lys Tyr Arg Ser
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Gly Arg Ile Arg Val Lys Asp Lys Glu Gly Asn Val Leu Met Asp Thr
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Lys Ser Ile Leu Gly Ala Cys Tyr Gly Gly Ser Phe Ile Gln Phe Thr
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Thr Ser Thr Ala Gly Pro Gln Trp Leu Pro Phe Ser Pro Thr Arg Ala
                             40
Leu Gly Gln Ala Ser Ser Ala Pro Val Gly Arg Leu Pro Arg Lys Thr
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Gln Ala Pro Gly Ala Ala Cys Gln Asp Gln Thr Gly Gly Leu Ala Pro
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gaccacagca ggagcattct agaatcctat ttgaggaaca aacattcaga caatcgtagc
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Asp Asn Pro Ser Asn Val Leu Glu Ser Tyr Val Arg Asp Lys His Ser
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            20
Asp Pro Ser Ser Asn Val Leu Glu Ser Tyr Gly Arg Asp Lys Leu Ser
Glu Asn Ser Lys Ser Ile Leu Glu Ser Tyr Leu Arg Tyr Lys His Ser
Glu Pro His Ser Ser Val Gln Glu Ser Tyr Val Arg Asp Lys His Ser
                    70
Asp His Ser Arg Ser Ile Leu Glu Ser Tyr Leu Arg Asn Lys His Ser
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                85
Asp Asn Arg Ser Ser Val Leu Glu Ser Phe Phe Phe Leu Lys Leu Ser
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            100
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<210> 4037
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Leu Arg Pro Cys Ile Gln Leu Ser Ser Lys Asn Glu Ala Ser Gly Met
Val Ala Pro Ala Val Gln Glu Lys Lys Val Lys Lys Arg Val Ser Phe
Ala Asp Asn Gln Gly Leu Ala Leu Thr Met Val Lys Val Phe Ser Glu
                    70
Phe Asp Asp Pro Leu Asp Met Pro Phe Asn Ile Thr Glu Leu Leu Asp
                                     90
Asn Ile Val Ser Leu Thr Thr Ala Glu Ser Glu Ser Phe Val Leu Asp
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Phe Ser Gln Pro Ser Ala Asp Tyr Leu Asp Phe Arg Asn Arg Leu Gln
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Thr Ala Gin Gly Leu Ser Lys Ala Glu Arg Gly Ala Leu Ala Arg Ala
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Ser Leu Arg Val Ser Ala Gln Pro Gly Thr Cys Ser Ser Ser Ala Ala
Ala Phe Pro Pro Leu Gly Pro Ala Pro Leu Ala Ala Pro Ala Arg Ser
Cys Asp Glu Ser Gly Pro Arg Gln Pro Asp Gly Arg Gly Pro Ser
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Trp Pro Thr Ala Ala Arg Arg Trp Ser Glu Pro Cys Ala Ala Ala Pro
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Arg Arg Pro Trp
            100
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Gly Ile Pro Ile Glu Glu Lys Ser Lys Lys Arg Gln Ala Thr Glu Ser
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His Thr Ser Gln Gly Thr Asp Arg Glu Tyr Glu Met Glu Glu Glu Asn
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Glu Gln Glu Pro Pro Lys Val Glu Ser Lys Pro Lys Val Ser Leu Lys
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Lys Lys Gln Phe Glu Pro Val Glu Ile Lys Val Val Lys Lys Ser Glu
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Cys Leu Tyr Asp Leu Ala Ala Val Val His His Gly Ser Gly Val
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Gly Ser Gly His Tyr Thr Ala Tyr Ala Thr His Glu Gly Arg Trp Phe
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Lys Val Tyr Val Gln Leu Trp Arg Arg Leu Lys Ala Tyr Asn Arg Val
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Ile Phe Val Gln Asn Cys Pro Asp Thr Ala Lys Lys Leu Glu Lys Asn
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His Ala His His Glu Trp Tyr Leu Lys Ile Gln Leu Glu Asp Ile Lys
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Asn Tyr Gln Glu Ala Leu Arg Tyr Ile Gly Lys Leu Pro Phe Glu Gln
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Lys Ala Phe Leu Glu His Met Ser Glu Val Gln Pro Asp Ser Pro Gln
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1395 Thr Ala Thr Ser 1410 Thr Pro Gly Thr 1425 Ser Ser Ser Asn Ser Leu Ser Asn 146 Ser Asp Thr Gly 1475 Ser Cys Arg Ala 1490 Leu Pro Glu Pro	Pro Leu ! Thr Ser ' 1430 Val Ala ' 1445 Thr Leu ' 0 Gln Glu ' Ser Thr : Asp Glu (1510	1400 Met Gly 1415 Thr Val Thr Ala Thr Thr Ala Glu 1480 Leu Leu 1495 Glu Asp	Ala Gln Thr Met Thr Thr 1450 Ser Leu 1465 Tyr Ser Ala Glu Asp Glu	Ser Phe 1420 Ser Thr 1435 Val Leu Thr Ser Leu Tyr Leu Asp 1500 Asn Glu 1515	1405 Pro Ser Ser Thr Asp 1485 Asp O	Asn I Ser V Val C Ser S 1470 Phe I Asp C	Jeu Th 14 14 1455 Ser Gl Jeu As Slu As Asn Gl	ir i440 in iu
1395 Thr Ala Thr Ser 1410 Thr Pro Gly Thr 1425 Ser Ser Ser Asn Ser Leu Ser Asn 146 Ser Asp Thr Gly 1475 Ser Cys Arg Ala 1490 Leu Pro Glu Pro	Pro Leu ! Thr Ser ' 1430 Val Ala ' 1445 Thr Leu ' 0 Gln Glu ' Ser Thr : Asp Glu (1510	1400 Met Gly 1415 Thr Val Thr Ala Thr Thr Ala Glu 1480 Leu Leu 1495 Glu Asp	Ala Gln Thr Met Thr Thr 1450 Ser Leu 1465 Tyr Ser Ala Glu Asp Glu	Ser Phe 1420 Ser Thr 1435 Val Leu Thr Ser Leu Tyr Leu Asp 1500 Asn Glu 1515	1405 Pro Ser Ser Thr Asp 1485 Asp O	Asn I Ser V Val C Ser S 1470 Phe I Asp C	Jeu Th 14 14 1455 Ser Gl Jeu As Slu As Asn Gl	ir i440 in iu
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1665	5				1670)				Leu 1675	;				1680
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Glu	Gln 189 Leu	1875 Leu)	1860 Pro 5 Thr	Leu Ser	Ala Lys	Cys 1899 Thr	Ala 1880 Pro	186! Ser) Phe	Gly Leu	Ala Ile	Leu Pro 1900 Ser	1885 Phe	1870 Asp Glu	Trp Thr	
Glu Gln 190	Gln 1890 Leu	1879 Leu O Tyr	1860 Pro Thr	Leu Ser Thr	Ala Lys Cys 1910 Arg	Cys 1899 Thr	Ala 1880 Pro Ser	186! Ser) Phe Phe	Gly Leu Gly	Ala Ile Ala 1915 Glu	Leu Pro 1900 Ser	1885 Phe) Arg	1870 Asp Glu Ala	Trp Thr	Arg Val 1920 Thr
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Glu Met	Asp Phe	Glu Asp 227	Met 2260 Phe	2249 Ile O Cys	Thr Met	Met His	Asp Thr 2280	Asn 226! Gly	2250 Ala 5 Ile	Glu Gln	Glu Lys	Tyr Gln 228	Val 2270 Met	2259 Asp O Glu	Leu Ala
Glu Met	Asp Phe Arg	Glu Asp 227 Asp	Met 2260 Phe	2249 Ile O Cys	Thr Met	Met His Lys	Asp Thr 2280 Val	Asn 226! Gly	2250 Ala 5 Ile	Glu Gln	Glu Lys Glu	Tyr Gln 2289 Lys	Val 2270 Met	2259 Asp O Glu	Leu Ala
Glu Met Phe	Asp Phe Arg 229	Glu Asp 227 Asp	Met 2260 Phe 5 Gly	2249 Ile O Cys Phe	Thr Met Asn	Met His Lys 229!	Asp Thr 2280 Val	Asn 226! Gly) Phe	2250 Ala 5 Ile Pro	Glu Gln Met	Glu Lys Glu 2306	Tyr Gln 2289 Lys	Val 2270 Met 5 Leu	2259 Asp O Glu Ser	Leu Ala Ser
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Glu Met Phe Phe 2309	Asp Phe Arg 229 Ser	Glu Asp 227! Asp O His	Met 2260 Phe 5 Gly Glu	Ile O Cys Phe Glu	Thr Met Asn Val 2310	Met His Lys 2299 Gln	Asp Thr 2280 Val Met	Asn 2269 Gly Phe	2250 Ala 5 Ile Pro	Glu Gln Met Cys 231	Glu Lys Glu 2300 Gly	Tyr Gln 228! Lys) Asn	Val 2270 Met 5 Leu Gln	Asp O Glu Ser	Leu Ala Ser Pro 2320
Glu Met Phe Phe 2309	Asp Phe Arg 229 Ser	Glu Asp 227! Asp O His	Met 2260 Phe 5 Gly Glu	Ile O Cys Phe Glu	Thr Met Asn Val 2310	Met His Lys 2299 Gln	Asp Thr 2280 Val Met	Asn 2269 Gly Phe	2250 Ala 5 Ile Pro	Glu Gln Met Cys 231	Glu Lys Glu 2300 Gly	Tyr Gln 228! Lys) Asn	Val 2270 Met 5 Leu Gln	Asp O Glu Ser	Leu Ala Ser Pro 2320
Glu Met Phe Phe 2309	Asp Phe Arg 229 Ser	Glu Asp 227! Asp O His	Met 2260 Phe 5 Gly Glu	Ile O Cys Phe Glu	Thr Met Asn Val 2310 Asp	Met His Lys 2299 Gln	Asp Thr 2280 Val Met	Asn 2269 Gly Phe	2250 Ala 5 Ile Pro	Glu Gln Met Cys 231:	Glu Lys Glu 2300 Gly	Tyr Gln 228! Lys) Asn	Val 2270 Met 5 Leu Gln	Asp O Glu Ser	Leu Ala Ser Pro 2320 Gly
Glu Met Phe Phe 2309 Ser	Asp Phe Arg 229 Ser Trp	Asp 227! Asp O His	Met 2266 Phe 5 Gly Glu Ala	Ile Cys Phe Glu Glu 232	Thr Met Asn Val 2310 Asp	Met His Lys 2299 Gln O	Asp Thr 2280 Val Met	Asn 2269 Gly Phe Ile Asn	2250 Ala 5 Ile Pro Leu Tyr 2330	Glu Gln Met Cys 2319 Thr	Glu Lys Glu 2300 Gly Glu	Gln 2289 Lys Asn Pro	Val 2270 Met Leu Gln Lys	2255 Asp Clu Ser Ser Leu 2335	Leu Ala Ser Pro 2320 Gly
Glu Met Phe Phe 2309 Ser	Asp Phe Arg 229 Ser Trp	Asp 227! Asp O His	Met 2260 Phe 5 Gly Glu Ala Asp	Ile Cys Cys Phe Glu Glu 2329	Thr Met Asn Val 2310 Asp	Met His Lys 2299 Gln O	Asp Thr 2280 Val Met	Asn 2269 Gly Phe Ile Asn Leu	2250 Ala Ile Pro Leu Tyr 2330 Arg	Glu Gln Met Cys 2319 Thr	Glu Lys Glu 2300 Gly Glu	Gln 2289 Lys Asn Pro	Val 2270 Met Leu Gln Lys Val	2255 Asp O Glu Ser Ser Leu 2335 Leu	Leu Ala Ser Pro 2320 Gly
Glu Met Phe Phe 2309 Ser	Asp Phe Arg 229 Ser Trp	Asp 2279 Asp O His Ala	Met 2260 Phe 5 Gly Glu Ala Asp 234	Ile Cys Cys Phe Glu Glu 232: Ser	Thr Met Asn Val 2310 Asp Fro	Met His Lys 2299 Gln O Ile	Asp Thr 2280 Val Met Ile	Asn 2269 Gly Phe Ile Asn Leu 2349	2250 Ala Ile Pro Leu Tyr 2330 Arg	Glu Gln Met Cys 231: Thr	Glu Lys Glu 2300 Gly Glu Val	Gln 228! Lys Asn Pro	Val 2270 Met 5 Leu Gln Lys Val 2350	2255 Asp O Glu Ser Ser Leu 2335 Leu O	Leu Ala Ser Pro 2320 Gly Cys
Glu Met Phe Phe 2309 Ser	Asp Phe Arg 229 Ser Trp	Glu Asp 2279 Asp His Ala Arg	Met 2260 Phe 5 Gly Glu Ala Asp 2340 Ser	Ile Cys Cys Phe Glu Glu 232: Ser	Thr Met Asn Val 2310 Asp Fro	Met His Lys 2299 Gln O Ile	Asp Thr 2280 Val Met Ile Phe Lys	Asn 2265 Gly Phe Ile Asn Leu 2345 Ala	2250 Ala Ile Pro Leu Tyr 2330 Arg	Glu Gln Met Cys 231: Thr	Glu Lys Glu 2300 Gly Glu Val	Gln 2289 Lys Asn Pro Arg	Val 2270 Met 5 Leu Gln Lys Val 2350 Thr	2255 Asp O Glu Ser Ser Leu 2335 Leu O	Leu Ala Ser Pro 2320 Gly
Glu Met Phe 2309 Ser Tyr	Asp Phe Arg 229 Ser Trp Thr	Glu Asp 227! Asp His Ala Arg Ser 235	Met 2266 Phe 5 Gly Glu Ala Asp 2346 Ser	2249 Ile Cys Phe Glu Glu 2329 Ser O Asp	Thr Met Asn Val 2310 Asp Fro	Met His Lys 2299 Gln O Ile Gly Arg	Thr 2280 Val Met Ile Phe Lys 2360	Asn 2269 Gly Phe Ile Asn Leu 2349 Ala	2250 Ala Ile Pro Leu Tyr 2330 Arg Phe	Glu Gln Met Cys 231! Thr Phe	Glu Lys Glu 2300 Gly Glu Val	Gln 2289 Lys Asn Pro Arg	Val 2270 Met 5 Leu Gln Lys Val 2350 Thr	Asp Glu Ser Ser Leu 233! Leu	Leu Ala Ser Pro 2320 Gly Cys Gly
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Phe Pro Pro Phe Pro Asp Arg Ala Pro Val Phe Pro Asp Arg Met Met
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His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu Ile Thr Asn
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Pro Val Leu Met Val Ile Ser His Ala Ala Pro His Gly Pro Glu Asp
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Thr Pro Ser Tyr Asn Tyr Ala Pro Asp Pro Asp Lys His Trp Ile Met
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Arg Tyr Thr Gly Pro Met Lys Pro Ile His Met Glu Phe Thr Asn Met
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Phe Tyr Val Arg Gly Pro Asn Val Glu Ala Gly Cys Leu Asn Pro His
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Leu Thr Cys Phe Thr His Asp Asn Gln His Trp Gln Thr Ala Pro Phe
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Gln Leu His Val Gln Leu Met Glu Leu Arg Ser Cys Lys Gly Tyr Lys
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Leu Pro Phe Gly Lys Val Thr Asn Leu Leu Met Leu Lys Gly Lys Ser
Gln Ala Phe Leu Glu Met Ala Ser Glu Glu Ala Ala Val Thr Met Val
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Asn Tyr Tyr Thr Pro Ile Thr Pro His Leu Arg Ser Gln Pro Val Tyr
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Gln Ala Arg Ala Gln Ala Ala Leu Gln Ala Val Ser Ala Val Gln Ser
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Pro Gly Gln Ser Pro Val Leu Arg Ile Ile Ile Glu Asn Leu Phe Tyr
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Ala Thr Gly Leu Ser Val Pro Ala Val Pro Gly Ala Leu Gly Pro Leu
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Asp Val His Arg Val Lys Ile Met Phe Asn Lys Lys Glu Asn Ala Leu
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Val Gln Met Ala Asp Ala Asn Gln Ala Gln Leu Ala Met Asn His Leu
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Ser Gly Gln Arg Leu Tyr Gly Lys Val Leu Arg Ala Thr Leu Ser Lys
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His Gln Ala Val Gln Leu Pro Arg Glu Gly Gln Glu Asp Gln Gly Leu
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Thr Lys Asp Phe Ser Asn Ser Pro Leu His Arg Phe Lys Lys Pro Gly
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Ser Lys Asn Phe Gln Asn Ile Phe Pro Pro Ser Ala Thr Leu His Leu
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Ser Asn Ile Pro Pro Ser Val Thr Val Asp Asp Leu Lys Asn Leu Phe
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Ile Glu Ala Gly Cys Ser Val Lys Ala Phe Lys Phe Phe Gln Lys Asp
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Arg Lys Met Ala Leu Ile Gln Leu Gly Ser Val Glu Glu Ala Ile Gln
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Leu Tyr Thr Ile Phe Ile Val Ala Thr Lys Ile Thr Met Met Thr Thr
Gln Thr Ser Thr Met Thr Phe Ala Pro Phe Glu Asp Thr Leu Ser Trp
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Met Leu Phe Gly Trp Gln Gln Pro Phe Ser Ser Cys Glu Lys Lys Ser
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Gln Ala Leu Lys Ala Arg Met Thr Ser Phe His Arg Phe Phe Phe Thr
Ala Asn Gln Val Lys Ile Tyr Thr Asn Gln Glu Lys Thr Arg Thr Phe
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Ile Gly Leu Glu Val Thr Ser Gly His Ala Gln Phe Leu Asp Leu Val
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Ser Glu Val Asp Arg Val Met Glu Glu Phe Asn Leu Thr Thr Phe Tyr
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Gln Asp Pro Ser Phe His Leu Ser Leu Ala Trp Cys Val Gly Asp Ala
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Arg Leu Gln Leu Glu Gly Gln Cys Leu Gln Glu Leu Gln Ala Ile Val
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Asp Gly Phe Glu Asp Ala Glu Val Leu Leu Arg Val His Thr Glu Gln
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Cys Lys Ser Glu Gln Arg Pro Ser Ser Leu Pro Val Gly Pro Val Leu
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Thr Phe Arg Arg Pro Gln Ile Asp Pro Ala Val Glu Gly Phe Ile Arg
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Ser Thr Ala Pro Val Met Asp Leu Leu Gly Leu Asp Ala Pro Val Ala
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Cys Ser Ile Ala Asn Ser Lys Thr Ser Asn Thr Leu Glu Lys Asp Leu
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Asp Leu Leu Ala Ser Val Pro Ser Pro Ser Ser Ser Gly Ser Arg Lys
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Val Val Gly Ser Met Pro Thr Ala Gly Ser Ala Gly Ser Val Pro Glu
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Asn Leu Asn Leu Phe Pro Glu Pro Gly Ser Lys Ser Glu Glu Ile Gly
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Lys Lys Gln Leu Ser Lys Asp Ser Ile Leu Ser Leu Tyr Gly Ser Gln
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Ala Tyr Pro Thr Ala Tyr Pro Ser Phe Pro Gly Val Thr Pro Pro Asn
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Ser Ile Met Gly Ser Met Met Pro Pro Pro Val Gly Met Val Ala Gln
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Gln Met Thr Gln Gln Met Ala Gly Met Asn Phe Tyr Gly Ala Asn Gly
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Arg Gln His Phe Val Glu Asn Asp Glu Met Tyr Ser Val Gln Asp Leu
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Leu Asp Val His Ala Gly Arg Leu Gly Cys Ser Leu Thr Glu Ile His
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Thr Leu Phe Ala Lys His Ile Lys Leu Asp Cys Glu Arg Cys Gln Ala
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Lys Gly Phe Val Cys Glu Leu Cys Arg Glu Gly Asp Val Leu Phe Pro
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Phe Asp Ser His Thr Ser Val Cys Ala Asp Cys Ser Ala Val Phe His
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Leu Thr Pro Ser Val Cys Leu Pro Ser Lys Leu His Cys Pro Asn Arg
Glu Ala Leu His Ala Gln Pro Gly Glu Gln Gly Trp Met Gly Leu Lys
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Arg Ala Gln Pro Ser Pro Glu Arg Thr Leu His Ser Asn Leu Pro Gln
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Thr Met Glu Gln Ile Phe Met Asn Val Ala Ile Phe Glu Asp Glu Val
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Phe Ala Gly Val Thr Thr His Gln Glu Leu Phe Pro His Ser Leu Leu
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Ser Val Ile Ala Asn Phe Ile Pro Phe Ser Asp His Asn Gln Ser Pro
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Tyr Thr Gly Tyr Asp Met Glu Asp Ala Met Ile Val Asn Lys Ala Ser
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Trp Glu Arg Gly Phe Ala His Gly Ser Val Tyr Lys Ser Glu Phe Ile
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105

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Lys Leu Arg Arg Val Gln Arg Pro Glu Asp Ala Ser Gly Gly Ser Ser
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Pro Ser Gly Thr Ser Lys Ser Asp Ala Asn Arg Ala Ser Ser Gly Gly
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Gly Gly Gly Leu Met Glu Glu Met Asn Lys Leu Leu Ala Lys Arg
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cgctggcttg gccagcagaa ccagccccaa gccagcacct ttggtaaata aagcagcatc
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Phe Leu Leu Val Phe Ala Ile Ala Ala Ala Ala Tyr Val Trp Ile Glu
Gly Thr Lys Asp Pro Ser Arg Asn Arg Tyr Lys Leu Phe Leu Glu Cys
                                            60
                        55
Thr Leu Ile Leu Thr Ser Val Val Pro Pro Glu Leu Pro Ile Glu Leu
                                        75
                    70
Ser Leu Ala Val Asn Thr Ser Leu Ile Ala Leu Ala Lys Leu Tyr Met
                                    90
Tyr Cys Thr Glu Pro Phe Arg Ile Pro Phe Ala Gly Lys Val Glu Val
                                105
                                                     110
            100
Cys Cys Phe Asp Lys Thr Gly Thr Leu Thr Ser Asp Ser Leu Val Val
                                                 125
                            120
        115
Arg Gly Val Ala Gly Leu Arg Asp Gly Lys Glu Val Thr Pro Val Ser
                                            140
                        135
Ser Ile Pro Val Glu Thr His Arg Ala Leu Ala Ser Cys His Ser Leu
                                        155
                    150
145
Met Gln Leu Asp Asp Gly Thr Leu Val Gly Asp Pro Leu Glu Lys Ala
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Met Leu Thr Ala Val Asp Trp Thr Leu Thr Lys Asp Glu Lys Val Phe
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Pro Arg Ser Ile Lys Thr Gln Gly Leu Lys Ile His Gln Arg Phe His
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Phe Ala Ser Ala Leu Lys Arg Met Ser Val Leu Ala Ser Tyr Glu Lys
                    215
Leu Gly Ser Thr Asp Leu Cys Tyr Ile Ala Ala Val Lys Gly Ala Pro
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Glu Thr Leu His Ser Met Phe Ser Gln Cys Pro Pro Asp Tyr His His
              245
                               250
Ile His Thr Glu Ile Ser Arg Glu Gly Ala Arg Val Leu Ala Leu Gly
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Tyr Lys Glu Leu Gly His Leu Thr His Gln Gln Ala Arg Glu Val Lys
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Arg Glu Ala Leu Glu Cys Ser Leu Lys Phe Val Gly Phe Ile Val Val
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Ser Cys Pro Leu Lys Ala Asp Ser Lys Ala Val Ile Arg Glu Ile Gln
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                                   315
Asn Ala Ser His Arg Val Val Met Ile Thr Gly Asp Asn Pro Leu Thr
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                                330
Ala Cys His Val Ala Gln Glu Leu His Phe Ile Glu Lys Ala His Thr
                           345
         340
Leu Ile Leu Gln Pro Pro Ser Glu Lys Gly Arg Gln Cys Glu Trp Arg
                        360
                                          365
Ser Ile Asp Gly Ser Ile Val Leu Pro Leu Xaa Pro Gly Ala Pro Gln
                                      380
                    375
Arg His Trp Pro Trp Ser Thr His Xaa Cys Leu Thr Gly Asp Gly Leu
                                   395 . 400
                 390
Ala His Leu Gln Ala Thr Asp Pro Gln Gln Leu Leu Arg Leu Ile Pro
              405
                                410
His Val Gln Val Phe Ala Arg Val Ala Pro Lys Gln Lys Glu Phe Val
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                            425
Ile Thr Ser Leu Lys Glu Leu Gly Tyr Val Thr Leu Met Cys Gly Asp
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Gly Thr Asn Asp Val Gly Ala Leu Lys His Ala Asp Val Gly Val Ala
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Leu Leu Ala Asn Ala Pro Glu Arg Val Val Glu Arg Arg Arg Pro
                                  475
                 470
Arg Asp Ser Pro Thr Leu Ser Asn Ser Gly Ile Arg Ala Thr Ser Arg
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Thr Ala Lys Gln Arg Ser Gly Leu Pro Pro Ser Glu Glu Gln Pro Thr
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Ser Gln Arg Asp Arg Leu Ser Gln Val Leu Arg Asp Leu Glu Asp Glu
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Ser Thr Pro Ile Val Lys Leu Gly Asp Ala Ser Ile Ala Ala Pro Phe
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Thr Ser Lys Leu Ser Ser Ile Gln Cys Ile Cys His Val Ile Lys Gln
545 550
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Gly Arg Cys Thr Leu Val Thr Thr Leu Gln Met Phe Lys Ile Leu Ala
                               570
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Leu Asn Ala Leu Ile Leu Ala Tyr Ser Gln Ser Val Leu Tyr Leu Glu
                           585
          580
Gly Val Lys Phe Ser Asp Phe Gln Ala Thr Leu Gln Gly Leu Leu
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                                          605
Ala Gly Cys Phe Leu Phe Ile Ser Arg Ser Lys Pro Leu Lys Thr Leu
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                    615
Ser Arg Glu Arg Pro Leu Pro Asn Ile Phe Asn Leu Tyr Thr Ile Leu
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635
625
                    630
Thr Val Met Leu Gln Phe Phe Val His Phe Leu Ser Leu Val Tyr Leu
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Tyr Arg Glu Ala Gln Ala Arg Ser Pro Xaa Arg Xaa Gln Glu Gln Phe
                                665
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Val Asp Leu Tyr Lys Glu Phe Glu Pro Ser Leu Val Asn Ser Thr Val
                            680
Tyr Ile Met Ala Met Ala Met Gln Met Ala Thr Phe Ala Ile Asn Tyr
                                            700
                        695
Lys Gly Pro Pro Phe Met Glu Ser Leu Pro Glu Asn Lys Pro Leu Val
                                        715
                                                             720
                    710
Trp Ser Leu Ala Val Ser Leu Leu Ala Ile Ile Gly Leu Leu Gly
                                    730
                725
Ser Ser Pro Asp Phe Asn Ser Gln Phe Gly Leu Val Asp Ile Pro Val
                                745
Glu Phe Lys Leu Val Ile Ala Gln Val Leu Leu Leu Asp Phe Cys Leu
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        755
Ala Leu Leu Ala Asp Arg Val Leu Gln Phe Phe Leu Gly Thr Pro Lys
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Leu Lys Val Pro Ser
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gtgacacata aggaggttgg aatgttgcat cagcaggtag aagaacatga aaaaatcaag
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780
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agcagtaaac tggagcgggc taatgacact atctgtgcca atgagttgga aatagagcgc
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Gln Trp Ala Glu Gln Thr Arg Arg Leu Gln Arg Leu Asp Val Ser Leu
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Ala Val Ala Arg Val Arg Ser Ala Gly Pro Ser Cys Gln Asn Lys Gly
Asp Leu Val Met Glu Ala Leu Leu Glu Gly Ile Gln Asn Arg Gly His
                        55
Gly Gly Gly Phe Leu Thr Ser Cys Glu Ala Glu Leu Gln Glu Leu Met
                                        75
                    70
Lys Gln Ile Asp Ile Met Val Ala His Lys Lys Ser Glu Trp Glu Gly
                                    90
Arg Thr His Ala Leu Glu Thr Cys Leu Lys Ile Arg Glu Gln Glu Leu
                                105
Lys Ser Leu Arg Ser Gln Leu Asp Val Thr His Lys Glu Val Gly Met
                            120
        115
Leu His Gln Gln Val Glu Glu His Glu Lys Ile Lys Gln Glu Met Thr
                                            140
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Met Glu Tyr Lys Gln Glu Leu Lys Lys Leu His Glu Glu Leu Cys Ile
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                    150
Leu Lys Arg Ser Tyr Glu Lys Leu Gln Lys Lys Gln Met Arg Glu Phe
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                                    170
Arg Gly Asn Thr Lys Asn His Arg Glu Asp Arg Ser Glu Ile Glu Arg
                                185
Leu Thr Ala Lys Ile Glu Glu Phe Arg Gln Lys Ser Leu Asp Trp Glu
                            200
Lys Gln Arg Leu Ile Tyr Gln Gln Gln Val Ser Ser Leu Glu Ala Gln
                                            220
                        215
Arg Lys Ala Leu Ala Glu Gln Ser Glu Ile Ile Gln Ala Gln Leu Val
                                        235
                    230
Asn Arg Lys Gln Lys Leu Glu Ser Val Glu Leu Ser Ser Gln Ser Glu
                                    250
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Ile Gln His Leu Ser Ser Lys Leu Glu Arg Ala Asn Asp Thr Ile Cys
                                265
Ala Asn Glu Leu Glu Ile Glu Arg Leu Thr Met Arg Val Asn Asp Leu
                                                285
                            280
        275
Val Gly Thr Ser Met Thr Val Leu Gln Glu Gln Gln Gln Lys Glu Glu
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Lys Leu Arg Glu Ser Glu Lys Leu Leu Glu Ala Leu Gln Glu Lys
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aaccctgtgg ggctggcccc tacacagttt ttaaggggta cagggaaggg aagaaacagg
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511
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Lys Asn Tyr Ala Leu Gln Glu His Val Ser Phe Val Ile Phe Leu Ser
                            40
Ser Asn Phe Phe Trp Arg Asp Glu Ser Phe Asp Leu Thr Leu Arg Ile
                        55
Gly Leu Lys Pro Phe Glu Arg Thr Lys Glu Ile Glu Ser Ala Phe Leu
                    70
Ser Pro Cys Ser Glu Asp Pro Ser His Leu Val Thr Ala Pro Trp Ala
                                     90
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Val Tyr Phe His Cys Leu Trp Lys Ile Glu Tyr Thr Cys
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            100
<210> 4091
<211> 1526
<212> DNA
<213> Homo sapiens
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cageetteag gggaccagaa gggaaggetg aacagagaag ggcaatttea egttegeeat
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  agatgttaac agcctctaga aatatgataa ttatcagcta tttgagatgc agtcactgta
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<213> Homo sapiens

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ctgaatgaag aaaacaaagg tcttgatgtt ctagtggaat atctctcatt tgcacagtac
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1320
attgtagtcc attcagtaga agatatgaat ttcagagttc acctgcagta tgaatttacc
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                                 25
Glu Arg Phe Ala Ile Val Leu Asn Ala Met Asn Leu Pro Pro Asp Lys
                             40
Ala Arg Leu Leu Arg Gln Tyr Asp Asn Glu Lys Lys Trp Glu Leu Ile
                         55
Cys Asp Gln Glu Arg Phe Gln Val Lys Asn Pro Pro His Thr Tyr Ile
 Gln Lys Leu Lys Gly Tyr Leu Asp Pro Ala Val Thr Arg Lys Lys Phe
                 85
 Arg Arg Arg Val Gln Glu Ser Thr Gln Val Leu Arg Glu Leu Glu Ile
                                 105
 Ser Leu Arg Thr Asn His Ile Gly Trp Val Arg Glu Phe Leu Asn Glu
         115
 Glu Asn Lys Gly Leu Asp Val Leu Val Glu Tyr Leu Ser Phe Ala Gln
                                             140
                         135
 Tyr Ala Val Thr Phe Asp Phe Glu Ser Val Glu Ser Thr Val Glu Ser
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155
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145
Ser Val Asp Lys Ser Lys Pro Trp Ser Arg Ser Ile Glu Asp Leu His
                                   170
               165
Arg Gly Ser Asn Leu Pro Ser Pro Val Gly Asn Ser Val Ser Arg Ser
                                                    190
                               185
Gly Arg His Ser Ala Leu Arg Tyr Asn Thr Leu Pro Ser Arg Arg Thr
                                                205
                           200
       195
Leu Lys Asn Ser Arg Leu Val Ser Lys Lys Asp Asp Val His Val Cys
                                           220
                        215
Ile Met Cys Leu Arg Ala Ile Met Asn Tyr Gln Tyr Gly Phe Asn Met
                                        235
                   230
Val Met Ser His Pro His Ala Val Asn Glu Ile Ala Leu Ser Leu Asn.
                                    250
               245
Asn Lys Asn Pro Arg Thr Lys Ala Leu Val Leu Glu Leu Leu Ala Ala
                                                  270
                               265
Val Cys Leu Val Arg Gly Gly His Glu Ile Ile Leu Ser Ala Phe Asp
                           280
                                                285
Asn Phe Lys Glu Val Cys Gly Glu Lys Gln Arg Phe Glu Lys Leu Met
                                            300
                        295
Glu His Phe Arg Asn Glu Asp Asn Asn Ile Asp Phe Met Val Ala Ser
                                       315
                    310
Met Gln Phe Ile Asn Ile Val Val His Ser Val Glu Asp Met Asn Phe
                                    330
                325
Arg Val His Leu Gln Tyr Glu Phe Thr Lys Leu Gly Leu Asp Glu Tyr
                                345
            340
Leu Asp Lys Leu Lys His Thr Glu Ser Asp Lys Leu Gln Val Gln Ile
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Gln Ala Tyr Leu Asp Asn Val Phe Asp Val Gly Ala Leu Leu Glu Asp
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Ala Glu Thr Lys Asn Ala Ala
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<210> 4096
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<212> PRT
<213> Homo sapiens
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Pro Arg Glu Gln Gly Gln Ile Val Gly Gly Phe Ser Ser Thr Val
Gln Val Arg Lys Leu Arg Leu Lys Arg Asp Gln Val Ala Ser Pro Ala
Lys Ser Glu Ala Ser Gly Gly Ala Cys Ala Arg Val Ser Gly Ser Val
Cys Pro Gly Ser Ile Ser Ala Cys Val Cys Leu Ser Arg Gln His Ile
                    70
Cys Ala Arg
<210> 4097
<211> 1385
<212> DNA
<213> Homo sapiens
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cgtgctgtcc tcacttgttc tacaatgagt gccaaatctg ctatcagcaa ggaaattttt
gcacctcttg atgaaaggat gctgggagct gtccaagtca agaggaggac aaagaaaaag
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1020
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aacatgtatt tttttctctg atattaagca ggaaggcatt ttaatgtggt gacatcagat
gttatttttc ctagatgaaa ataaaagtca agcagtgatt agtttcactc actgtcctag
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<210> 4098
<211> 258
<212> PRT
<213> Homo sapiens
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Glu Pro Arg Ala Leu Gly Arg Val Pro Arg Thr Gly Thr Ala Gly Ala
                                25
Arg Ala Arg Leu His Asp Ser Leu Arg Ala Val Leu Thr Cys Ser Thr
                            40
Met Ser Ala Lys Ser Ala Ile Ser Lys Glu Ile Phe Ala Pro Leu Asp
                                            60
Glu Arg Met Leu Gly Ala Val Gln Val Lys Arg Arg Thr Lys Lys
                    70
Ile Pro Phe Leu Ala Thr Gly Gly Gln Gly Glu Tyr Leu Thr Tyr Ile
                                    90
Cys Leu Ser Val Thr Asn Lys Lys Pro Thr Gln Ala Ser Ile Thr Lys
                                105
Val Lys Gln Phe Glu Gly Ser Thr Ser Phe Val Arg Arg Ser Gln Trp
Met Leu Glu Gln Leu Arg Gln Val Asn Gly Ile Asp Pro Asn Gly Asp
                                             140
                        135
Ser Ala Glu Phe Asp Leu Leu Phe Glu Asn Ala Phe Asp Gln Trp Val
                                        155
                    150
Ala Ser Thr Ala Ser Glu Lys Cys Thr Phe Phe Gln Ile Leu His His
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Thr Cys Gln Arg Tyr Leu Thr Asp Arg Lys Pro Glu Phe Ile Asn Cys
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Gln Ser Lys Ile Met Gly Gly Asn Ser Ile Leu His Ser Ala Ala Asp
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Ser Val Thr Ser Ala Val Gln Lys Ala Ser Gln Ala Leu Asn Glu Arg
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Gly Glu Arg Leu Gly Arg Ala Glu Glu Lys Thr Glu Asp Leu Lys Asn
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Leu Arg Lys Glu Lys Val His Val Ser Lys Ser Gly Gly Ser Gln Ala
Gln Ala Thr Gly Val Ile Ser Cys Val Ala Ser Arg Ile Cys Leu Ile
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Val Gln Asn Ser Ser Trp Gly Leu Gln Leu Leu Gly Glu Thr Gln Gly
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Leu Leu Leu His Ser Leu Gln Gly Leu Ser Arg Gln Arg Pro Trp Gly
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 gaggaggaag gcggtgacga gtctgacctg agttcggaat ccagcattaa gaagaaatct
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Gln Glu Ser Val Asp Thr Gly Glu Glu Glu Glu Gly Gly Asp Glu Ser
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Asp Leu Ser Ser Glu Ser Ser Ile Lys Lys Ser Gln Glu Glu Arg
 Lys Asp Arg Gln Ser Leu Asp Lys Pro Ala Arg Lys Arg Arg Arg Arg
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Ser Ser Gln Ala Glu Gly Leu Ala Asn Gly Pro Asp Val Leu Glu Thr
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Asp Gly Leu Gln Glu Val Pro Leu Cys Ser Cys Arg Met Glu Thr Pro
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                  150
Lys Ser Arg Glu Ile Thr Thr Leu Ala Asn Asn Gln Cys Met Ala Thr
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               165
Glu Ser Val Asp His Glu Leu Gly Arg Cys Thr Asn Ser Val Val Lys
                               185
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Tyr Glu Leu Met Arg Pro Ser Asn Lys Ala Pro Leu Leu Val Leu Cys
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Glu Asp His Arg Gly Arg Met Val Lys His Gln Cys Cys Pro Gly Cys
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Gly Tyr Phe Cys Thr Ala Gly Asn Phe Met Glu Cys Gln Pro Glu Ser
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                   230
Ser Ile Ser His Arg Phe His Lys Asp Cys Ala Ser Arg Val Asn Asn
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Ala Ser Tyr Cys Pro His Cys Gly Glu Glu Ser Ser Lys Ala Lys Glu
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Val Thr Ile Ala Lys Ala Asp Thr Thr Ser Thr Val Thr Pro Val Pro
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Gly Ser Ala Xaa Pro Gly His His Ser Arg Arg Thr Thr Ser Cys Arg
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Val Gln Pro Pro Thr Xaa Pro Glu Gly Phe Asp Pro Thr Gly Pro Ala
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               325
Gly Leu Gly Arg Pro Thr Pro Gly Leu Ser Gln Gly Pro Gly Lys Glu
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Thr Leu Glu Ser Ala Leu Ile Ala Leu Asp Ser Glu Lys Pro Lys Lys
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Leu Arg Phe His Pro Lys Gln Leu Tyr Phe Ser Ala Arg Gln Gly Glu
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Leu Gln Lys Val Leu Leu Met Leu Val Asp Gly Ile Asp Pro Asn Phe
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                                       395
Lys Met Glu His Gln Asn Lys Arg Ser Pro Leu His Ala Ala Glu
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Ala Gly His Val Asp Ile Cys His Met Leu Val Gln Ala Gly Ala Asn
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Glu Asn Asn His Leu Glu Ala Val Lys Tyr Leu Ile Lys Ala Gly Ala
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                                           460
Leu Val Asp Pro Lys Asp Ala Glu Gly Ser Thr Cys Leu His Leu Ala
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                                       475
Ala Lys Lys Gly His Tyr Glu Val Val Gln Tyr Leu Leu Ser Asn Gly
                                   490
Arg Met Asp Val Asn Cys Gln Asp Asp Gly Gly Trp Thr Pro Met Ile
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				565	Leu				570					575	
			580		Arg			585					590		
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	610				Ser	615					620				
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				645	Arg				650					655	
	•		660		Ala			665					670		
•	_	675			Asn		680					685			
	690				Gln	695					700				
705					Gly 710					715					720
_				725	Pro Ala				730					735	
		-	740		Leu			745					750		
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				805	Asp				810					815	
			820		Glu			825					830		
		835			Arg		840					845			
	. 850				Glu	855					860				
865					870					875					880
_				885	Lys				890					895	
_			900		Ala			905					910		
		915			Asp		920					925			
Ala	Thr	Pro	Tyr	Glu	Thr	Pro	Pro	Ala	ser	σтĀ	Ald	Leu	GTA	ser	ĢΙΠ

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935
Gly Pro Pro Arg Arg Arg Leu Glu Asp Glu Glu Glu Arg Phe Arg Thr
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Gln Pro Lys Gly Ser Phe Gly Ala Ala Pro Pro Ala Ser Trp Arg Gly
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  Lys Arg Met Pro Ser Gly Arg Gly Gly Arg Asp Arg Phe Thr Ala Glu
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  Ser Tyr Thr Val Leu Gly Asp Thr Leu Ile Asp Gly Gly Glu His Tyr
  Trp Glu Val Arg Tyr Glu Pro Asp Ser Lys Ala Phe Gly Val Gly Val
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55

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Ala Tyr Arg Ser Leu Gly Arg Phe Glu Gln Leu Gly Lys Thr Ala Ala
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Ser Trp Cys Leu His Ser Thr Ile Gly Cys Arg Ser Ala Ser Arg Lys
His Ala Asn Lys Val Lys Val Leu Asp Ala Pro Val Pro Asp Cys Leu
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                                105
Gly Val His Cys Asp Phe His Gln Gly Leu Leu Ser Phe Tyr Asn Ala
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Arg Thr Lys Gln Val Leu His Thr Phe Lys Thr Arg Phe Thr Gln Pro
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Leu Leu Pro Ala Phe Thr Val Trp Cys Gly Ser Phe Gln Val Thr Thr
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Gly Thr Val Gly Arg Leu Asn Ile Thr Val Val Gln Ala Lys Leu Ala
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Lys Asn Tyr Gly Met Thr Arg Met Asp Pro Tyr Cys Arg Leu Arg Leu
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Gly Tyr Ala Val Tyr Glu Thr Pro Thr Ala His Asn Gly Ala Lys Asn
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 Pro Arg Trp Asn Lys Val Ile His Cys Thr Val Pro Pro Gly Val Asp
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 Ser Phe Tyr Leu Glu Ile Phe Asp Glu Arg Ala Phe Ser Met Asp Asp
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 Arg Ile Ala Trp Thr His Ile Thr Ile Pro Glu Ser Leu Arg Gln Gly
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 Lys Val Glu Asp Lys Trp Tyr Ser Leu Ser Gly Arg Gln Gly Asp Asp
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 Lys Glu Gly Met Ile Asn Leu Val Met Ser Tyr Ala Leu Leu Pro Ala
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 Ala Met Val Met Pro Pro Gln Pro Val Val Leu Met Pro Thr Val Tyr
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 Gln Gln Gly Val Gly Tyr Val Pro Ile Thr Gly Met Pro Ala Val Cys
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                            200
 Ser Pro Gly Met Val Pro Val Ala Leu Pro Pro Ala Ala Val Asn Ala
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215
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Gln Pro Arg Cys Ser Glu Glu Asp Leu Lys Ala Ile Gln Asp Met Phe
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225
Pro Asn Met Asp Gln Glu Val Ile Arg Ser Val Leu Glu Ala Gln Arg
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1140

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His Ser Arg Lys Ser Leu Cys Arg Ser Arg Glu Glu Leu Arg Gly Lys
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Val Arg Glu Leu Ala Ser Ala Val Arg Asn Ala Lys Tyr Leu Val Val
                                         75
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 Tyr Thr Gly Ala Gly Ile Ser Thr Ala Ala Ser Ile Pro Asp Tyr Arg
                                     90
                 85
Gly Pro Asn Gly Val Trp Thr Leu Leu Gln Lys Gly Arg Ser Val Ser
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             100
 Ala Ala Asp Leu Ser Glu Ala Glu Pro Thr Leu Thr His Met Ser Ile
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 Cys Asp Gly Leu His Leu Arg Ser Gly Leu Pro Arg Thr Ala Ile Ser
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 Glu Leu His Gly Asn Met Tyr Ile Glu Val Cys Thr Ser Cys Val Pro
                                     170
 Asn Arg Glu Tyr Val Arg Val Phe Asp Val Thr Glu Arg Thr Ala Leu
                                 185
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 His Arg His Gln Thr Gly Arg Thr Cys His Lys Cys Gly Thr Gln Leu
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                             200
 Arg Asp Thr Ile Val His Phe Gly Glu Arg Gly Thr Leu Gly Gln Pro
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                         215
 Leu Asn Trp Glu Ala Ala Thr Glu Ala Ala Ser Arg Ala Asp Thr Ile
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235
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Val Lys Ile Ser Arg Gln Gln Tyr Gln Asn Ala Leu Met Ala Ser Arg
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PCT/US00/08621 WO 00/58473

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PCT/US00/08621 WO 00/58473

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Pro Asp Val Leu Pro Ser Arg Leu His Pro Glu Gly Leu Gly His Gly
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Arg Thr Leu Phe Leu Val Met Lys Asn Tyr Pro Cys Thr Leu Arg Gln
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Tyr Leu Cys Val Asn Thr Pro Ser Pro Arg Leu Ala Ala Met Met Leu
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Lys Asn Leu Lys Leu Asp Lys Met Val Gly Trp Leu Leu Gln Gln Ser
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<213> Homo sapiens

<400> 4123

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Gly Pro Gly Pro Gly Arg Gly Ala Ala Gly Leu Ser Pro Ala Asp Ile
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Arg Lys Leu Arg Met Lys Leu Leu Trp Gln Ala Lys Met Ser Ser Ile
Gln Asp Trp Gly Glu Glu Val Glu Glu Gly Ala Val Tyr His Val Thr
                    70
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Leu Lys Arg Val Gln Ile Gln Gln Ala Ala Asn Lys Gly Ala Arg Trp
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Leu Gly Val Glu Gly Asp Gln Leu Pro Pro Gly His Thr Val Ser Gln
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            100
Tyr Glu Thr Cys Lys Ile Arg Thr Ile Lys Ala Gly Thr Leu Glu Lys
                            120
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Leu Val Glu Asn Leu Leu Thr Ala Phe Gly Asp Asn Asp Phe Thr Tyr
                                            140
                        135
Ile Ser Ile Phe Leu Ser Thr Tyr Arg Gly Phe Ala Ser Thr Lys Glu
                                        155
                    150
Val Leu Glu Leu Leu Asp Arg Tyr Gly Asn Leu Thr Ser Pro Asn
                                    170
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Cys Glu Glu Asp Gly Ser Gln Ser Ser Glu Ser Lys Met Val Ile
                                                    190
                                185
Arg Asn Ala Ile Ala Ser Ile Leu Arg Ala Trp Leu Asp Gln Cys Ala
                            200
                                                205
Glu Asp Phe Arg Glu Pro Pro His Phe Pro Cys Leu Gln Lys Leu Leu
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Asp Tyr Leu Thr Arg Met Met Pro Gly Ser Asp Pro Glu Arg Arg Ala
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                    230
Gln Asn Leu Leu Glu Gln Phe Gln Lys Gln Glu Val Glu Thr Asp Asn
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                245
Gly Leu Pro Asn Thr Ile Ser Phe Ser Leu Glu Glu Glu Glu Leu
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Glu Gly Gly Glu Ser Ala Glu Phe Thr Cys Phe Ser Glu Asp Leu Val
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Ala Glu Gln Leu Thr Tyr Met Asp Ala Gln Leu Phe Lys Lys Val Val
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Pro His His Cys Leu Gly Cys Ile Trp Ser Arg Arg Asp Lys Lys Glu
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Asn Lys His Leu Ala Pro Thr Ile Arg Ala Thr Ile Ser Gln Phe Asn
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Thr Leu Thr Lys Cys Val Val Ser Thr Ile Leu Gly Gly Lys Glu Leu
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Lys Thr Gln Gln Arg Ala Lys Ile Ile Glu Lys Trp Ile Asn Ile Ala
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His Glu Cys Arg Leu Leu Lys Asn Phe Ser Ser Leu Arg Ala Ile Val
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                                          380
Ser Ala Leu Gln Ser Asn Ser Ile Tyr Arg Leu Lys Lys Thr Trp Ala
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                   390
Ala Val Pro Arg Asp Arg Met Leu Met Phe Glu Glu Leu Ser Asp Ile
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Glu Gly Thr Ser Lys Phe Ala Asn Leu Asp Ser Ser Val Lys Glu Asn
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Gln Lys Arg Thr Gln Arg Arg Leu Gln Leu Gln Lys Asp Met Gly Val
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Met Gln Gly Thr Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Thr
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Met Leu Asp Thr Ala Leu Gln Asp Tyr Ile Glu Gly Gly Leu Ile Asn
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Phe Glu Lys Arg Arg Glu Phe Glu Val Ile Ala Gln Ile Lys Leu
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Leu Gln Ser Ala Cys Asn Ser Tyr Cys Met Thr Pro Asp Gln Lys Phe
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Ile Gln Trp Phe Gln Arg Gln Gln Leu Leu Thr Glu Glu Glu Ser Tyr
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Ala Leu Ser Cys Glu Ile Glu Ala Ala Ala Gly Ala Ser Thr Thr Ser
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Pro Lys Pro Arg Lys Ser Met Val Lys Arg Leu Ser Leu Leu Phe Leu
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                                  570
Gly Ser Asp Met Ile Thr Ser Pro Thr Pro Thr Lys Glu Gln Pro Lys
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Ser Thr Ala Ser Gly Ser Ser Gly Glu Ser Met Asp Ser Val Ser Val
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Ser Ser Cys Glu Ser Asn His Ser Glu Ala Glu Glu Gly Ser Ile Thr
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                       615
Pro Met Asp Thr Pro Asp Glu Pro Gln Lys Lys Leu Ser Glu Ser Ser
                   630
                                      635
Ser Ser Cys Ser Ser Ile His Ser Met Asp Thr Asn Ser Ser Gly Met
               645
                                  650
Ser Ser Leu Ile Asn Pro Leu Ser Ser Pro Pro Ser Cys Asn Asn Asn
                               665
           660
Pro Lys Ile His Lys Arg Ser Val Ser Val Thr Ser Ile Thr Ser Thr
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Val Leu Pro Pro Val Tyr Asn Gln Gln Asn Glu Asp Thr Cys Ile Ile
                      695
Arg Ile Ser Val Glu Asp Asn Asn Gly Asn Met Tyr Lys Ser Ile Met
                                     715
        710
Leu Thr Ser Gln Asp Lys Thr Pro Ala Val Ile Gln Arg Ala Met Leu
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730
Lys His Asn Leu Asp Ser Asp Pro Ala Glu Glu Tyr Glu Leu Val Gln
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Val Ile Ser Glu Asp Lys Glu Leu Val Ile Pro Asp Ser Ala Asn Val
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Phe Tyr Ala Met Asn Ser Gln Val Asn Phe Asp Phe Ile Leu Arg Lys
                        775
Lys Asn Ser Met Glu Glu Gln Val Lys Leu Arg Ser Arg Thr Ser Leu
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Thr Leu Pro Arg Thr Ala Lys Arg Gly Cys Trp Ser Asn Arg His Ser
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Lys Ile Thr Leu
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 tatgcccage geogtateae caeegagaee taeggtgetg cetteaeetg cetggagaet
 geetteegee tggaegeeet geaceggeag atgaagette tgggagagga cageeeggte
  agcaaactgc aggtcaagct ggagccagga gtgaatccca gccacctgat gaacctgttc
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  caggacetge tggacteett cetgagette tteeeggage tgaaggagea gagegtggae
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  aggacettee agacageact etteetggae eggeteetgg atgggteece getgeegeag
  gaggtggtga tgagcctgtc caagtgctac teeteeetge tggactcgat gaacgetgag
   atccgcatcc gctggctgca gattgtggtc cgcaacgact actatcctga cctccacagg
   1020
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gtgcggcgct tcctggagag ccagatgtca cgcatgtaca ccatcccgct gtacgaggac
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gacgcacagg ccctgctgct tggggacgag gcccccagca gtgccatctc tctcagggac
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 Arg Tyr Asp Ile Val Phe Leu Pro Pro Ser Phe Pro Ile Val Ala Met
  Glu Asn Pro Cys Leu Thr Phe Ile Ile Ser Ser Ile Leu Glu Ser Asp
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55
Glu Phe Leu Val Ile Asp Val Ile His Glu Val Ala His Ser Trp Phe
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Gly Asn Ala Val Thr Asn Ala Thr Trp Glu Glu Met Trp Leu Ser Glu
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Gly Leu Ala Thr Tyr Ala Gln Arg Arg Ile Thr Thr Glu Thr Tyr Gly
                             105
          100
Ala Ala Phe Thr Cys Leu Glu Thr Ala Phe Arg Leu Asp Ala Leu His
                                         125
                         120
Arg Gln Met Lys Leu Leu Gly Glu Asp Ser Pro Val Ser Lys Leu Gln
                                        140
                     135
Val Lys Leu Glu Pro Gly Val Asn Pro Ser His Leu Met Asn Leu Phe
                                    155
                 150
Thr Tyr Glu Lys Gly Tyr Cys Phe Val Tyr Tyr Leu Ser Gln Leu Cys
                                170
               165
Gly Asp Pro Gln Arg Phe Asp Asp Phe Leu Arg Ala Tyr Val Glu Lys
                                                190
                             185
           180
Tyr Lys Phe Thr Ser Val Val Ala Gln Asp Leu Leu Asp Ser Phe Leu
                                            205
        195 200
Ser Phe Phe Pro Glu Leu Lys Glu Gln Ser Val Asp Cys Arg Ala Gly
                              220
                      215
Leu Glu Phe Glu Arg Trp Leu Asn Ala Thr Gly Pro Pro Leu Ala Glu
                 230
                                     235
 Pro Asp Leu Ser Gln Gly Ser Ser Leu Thr Arg Pro Val Glu Ala Leu
              245 . 250
 Phe Gln Leu Trp Thr Ala Glu Pro Leu Asp Gln Ala Ala Ala Ser Ala
 Ser Ala Ile Asp Ile Ser Lys Trp Arg Thr Phe Gln Thr Ala Leu Phe
                                             285
                           280
 Leu Asp Arg Leu Leu Asp Gly Ser Pro Leu Pro Gln Glu Val Val Met
                     295
 Ser Leu Ser Lys Cys Tyr Ser Ser Leu Leu Asp Ser Met Asn Ala Glu
                                      315
                  310
 Ile Arg Ile Arg Trp Leu Gln Ile Val Val Arg Asn Asp Tyr Tyr Pro
                                  330
               325
 Asp Leu His Arg Val Arg Arg Phe Leu Glu Ser Gln Met Ser Arg Met
                              345
            340
 Tyr Thr Ile Pro Leu Tyr Glu Asp Leu Cys Thr Gly Ala Leu Lys Ser
                          360
 Phe Ala Leu Glu Val Phe Tyr Gln Thr Gln Gly Arg Leu His Pro Asn
                                         380
                       375
 Leu Arg Arg Ala Ile Gln Gln Ile Leu Ser Gln Gly Leu Gly Ser Ser
                                      395
                   390
 Thr Glu Pro Ala Ser Glu Pro Ser Thr Glu Leu Gly Lys Ala Glu Ala
                                   410
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 Asp Thr Asp Ser Asp Ala Gln Ala Leu Leu Gly Asp Glu Ala Pro
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 Ser Ser Ala Ile Ser Leu Arg Asp Val Asn Val Ser Ala
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  <212> DNA
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egeceetgte etgggagtee ettggeecaa acaeceaeet gaettagtgg eteetetgea
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240
gagaatgcac cagagaatgt agtggaccag ggagcaggag cctcccgggg tggaaacaca
cggaaaagcc tcgaggacaa cggctccacc agggtcaccc cgagtgtcca gccccacctc
cageceatea gaaacatgag tgtgageegg accatggagg acagetgtga getggaeetg
gtgtacgtca cagagaggat catcgctgtc tecttececa gcacagecaa tgaggagaac
tteeggagea aceteegtga ggtggegeag atgeteaagt eeaaacatgg aggeaactae
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gaatttggct ggcccgacct ccacacccca gccctggaga agatctgcag catctgtaag
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 cacacgcagg ggccactaga tgggagcctg tatgctaagg tgaagaagaa agactccctg
 caeggeagea ceggggetgt taatgecaca egteetacae tgteggeeae eeceaaceae
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gtggaacaca cgctttctgt gagcagcgac tcgggcaact ccacagcctc caccaagacc
1620
gacaagaceg acgageetgt ecceggggee tecagtgeec atgetgeecg cactgtgace
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accattgac
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Ser Asn His Glu Leu Val Pro Ile Thr Thr Glu Asn Ala Pro Glu Asn
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Val Val Asp Gln Gly Ala Gly Ala Ser Arg Gly Gly Asn Thr Arg Lys
                           40
Ser Leu Glu Asp Asn Gly Ser Thr Arg Val Thr Pro Ser Val Gln Pro
                                             60
                        55
His Leu Gln Pro Ile Arg Asn Met Ser Val Ser Arg Thr Met Glu Asp
                    70
                                        75
Ser Cys Glu Leu Asp Leu Val Tyr Val Thr Glu Arg Ile Ile Ala Val
                85
Ser Phe Pro Ser Thr Ala Asn Glu Glu Asn Phe Arg Ser Asn Leu Arg
                                 105
            100
Glu Val Ala Gln Met Leu Lys Ser Lys His Gly Gly Asn Tyr Leu Leu
                            120
Phe Asn Leu Ser Glu Arg Arg Pro Asp Ile Thr Lys Leu His Ala Lys
                                             140
                        135
Val Leu Glu Phe Gly Trp Pro Asp Leu His Thr Pro Ala Leu Glu Lys
                                         155
                    150
Ile Cys Ser Ile Cys Lys Ala Met Asp Thr Trp Leu Asn Ala Asp Pro
                                     170
                165
His Asn Val Val Val Leu His Asn Lys Gly Asn Arg Gly Arg Ile Gly
                                 185
 Val Val Ile Ala Ala Tyr Met His Tyr Ser Asn Ile Ser Ala Ser Ala
                             200
 Asp Gln Ala Leu Asp Arg Phe Ala Met Lys Arg Phe Tyr Glu Asp Lys
                         215
 Ile Val Pro Ile Gly Gln Pro Ser Gln Arg Arg Tyr Val His Tyr Phe
                                        235
                     230
 Ser Gly Leu Leu Ser Gly Ser Ile Lys Met Asn Asn Lys Pro Leu Phe
                                     250
                 245
 Leu His His Val Ile Met His Gly Ile Pro Asn Phe Glu Ser Lys Gly
                                 265
 Gly Cys Arg Pro Phe Leu Arg Ile Tyr Gln Ala Met Gln Pro Val Tyr
                             280
 Thr Ser Gly Ile Tyr Asn Ile Pro Gly Asp Ser Gln Thr Ser Val Cys
                                             300
                         295
 Ile Thr Ile Glu Pro Gly Leu Leu Leu Lys Gly Asp Ile Leu Leu Lys
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315

310

305

320

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Cys Tyr His Lys Lys Phe Arg Ser Pro Ala Arg Asp Val Ile Phe Arg
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               325
Val Gln Phe His Thr Cys Ala Ile His Ala Trp Gly Val Val Phe Gly
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Lys Glu Asp Leu Asp Asp Ala Phe Lys Asp Asp Arg Phe Pro Glu Tyr
                            360
Gly Lys Val Glu Phe Val Phe Ser Tyr Gly Pro Glu Lys Ile Gln Gly
                                            380
                        375
Met Glu His Leu Glu Asn Gly Pro Ser Val Ser Val Asp Tyr Asn Thr
                                        395
                    390
Ser Asp Pro Leu Ile Arg Trp Asp Ser Tyr Asp Asn Phe Ser Gly His
                                    410
                405
Arg Asp Asp Gly Met Glu Glu Val Val Gly His Thr Gln Gly Pro Leu
                                425
            420
Asp Gly Ser Leu Tyr Ala Lys Val Lys Lys Lys Asp Ser Leu His Gly
                            440
Ser Thr Gly Ala Val Asn Ala Thr Arg Pro Thr Leu Ser Ala Thr Pro
                        455
Asn His Val Glu His Thr Leu Ser Val Ser Ser Asp Ser Gly Asn Ser
                                        475
465
Thr Ala Ser Thr Lys Thr Asp Lys Thr Asp Glu Pro Val Pro Gly Ala
                                    490
                485
Ser Ser Ala His Ala Ala Arg Thr Val Thr Ile Leu Val Trp Gln Phe
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Ile Val Gln Asp Val Cys Leu Pro Leu Arg Cys
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gacctcgatc cagatgtgat tggccccgta cccctgattc tcgatcctaa cagcgacacc
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 aggictigge caccageece geggigetee eegeceeege cageeegeee eggeeettet
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Val Leu Val Arg Asn Pro Gly His Lys Gly Leu Arg Pro Val Tyr Glu
                           40
Glu Leu Asp Ser Asp Ser Glu Asp Leu Asp Pro Asn Pro Glu Asp Leu
                                          60
                       55
Asp Pro Val Ser Glu Asp Pro Glu Pro Asp Pro Glu Asp Leu Asn Thr
                                      75
                   70
65
Val Pro Glu Asp Val Asp Pro Ser Tyr Glu Asp Leu Glu Pro Val Ser
                                   90
Glu Asp Leu Asp Pro Asp Ala Glu Ala Pro Gly Ser Glu Pro Gln Asp
                               105
           100
Pro Asp Pro Met Ser Ser Ser Phe Asp Leu Asp Pro Asp Val Ile Gly
                                              125
        115
Pro Val Pro Leu Ile Leu Asp Pro Asn Ser Asp Thr Leu Ser Pro Gly
                                           140
                       135
Asp Pro Lys Val Asp Pro Xaa Ser Pro Leu Ala Ser Leu Arg Ala Pro
                                       155
                   150
Arg Ser Trp Pro Pro Ala Pro Arg Cys Ser Pro Pro Pro Pro Ala Arg
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Pro Gly Pro Ser Pro Ala Arg Ile Ala Ala Lys Pro Ser Ala Ala Ala
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 Pro Gly
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 accccggagg tcccaaggaa cccagtttga gaaccaaggc tttaggccaa ggacttcctt
 gcacaagaag gtgcagatgt acagggatgg ttcagacagt ggcctcaacc tcaatggctt
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1646
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 Glu Glu His Ser Ala Glu Pro Arg Pro Arg Thr Arg Ser Asn Pro Glu
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Gly Ala Glu Asp Arg Ala Val Gly Ala Gln Ala Ser Val Gly Ser Arg
                           40
Ser Glu Gly Glu Gly Glu Ala Ala Ser Ala Asp Asp Gly Ser Leu Asn
                        55
Thr Ser Gly Ala Gly Pro Lys Ser Trp Gln Val Pro Pro Pro Ala Pro
Glu Val Gln Ile Arg Thr Pro Arg Val Asn Cys Pro Glu Lys Val Ile
                                    90
               85
Ile Cys Leu Asp Leu Ser Glu Glu Met Ser Leu Pro Lys Leu Glu Ser
                               105
Phe Asn Gly Ser Lys Thr Asn Ala Leu Asn Val Ser Gln Lys Met Ile
                                                125
                           120
Glu Met Phe Val Arg Thr Lys His Lys Ile Asp Lys Ser His Glu Phe
                                            140
                        135
Ala Leu Val Val Val Asn Asp Asp Thr Ala Trp Leu Ser Gly Leu Thr
                                        155
                    150
Ser Asp Pro Arg Glu Leu Cys Ser Cys Leu Tyr Asp Leu Glu Thr Ala
                                    170
Ser Cys Ser Thr Phe Asn Leu Glu Gly Leu Phe Ser Leu Ile Gln Gln
                                185
            180
Lys Thr Glu Leu Pro Val Thr Glu Asn Val Gln Thr Ile Pro Pro Pro
                            200
                                                205
Tyr Val Val Arg Thr Ile Leu Val Tyr Ser Arg Pro Pro Cys Gln Pro
                        215
Gln Phe Ser Leu Thr Glu Pro Met Lys Lys Met Phe Gln Cys Pro Tyr
                                        235
                    230
Phe Phe Phe Asp Val Val Tyr Ile His Asn Gly Thr Glu Glu Lys Glu
                                   250
Glu Glu Met Ser Trp Lys Asp Met Phe Ala Phe Met Gly Ser Leu Asp
                                265
           260
Thr Lys Gly Thr Ser Tyr Lys Tyr Glu Val Ala Leu Ala Gly Pro Ala
                            280
Leu Glu Leu His Asn Cys Met Ala Lys Leu Leu Ala His Pro Leu Gln
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Cys Ala Thr Ala Asn Asn Pro Thr Ala Ile Thr Pro Asp Glu Tyr Phe
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100

110

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Arg Glu Arg Gln Glu Arg Gln Glu Arg Leu Glu Arg Gln Glu
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60

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  Glu Gln His Leu Phe Asp Val Asn Asn Ser Gly Gly Gln Ser Ser Glu
  Asp Ser Glu Ser Gly Thr Leu Ser Ala Ser Ser Ala Thr Ser Ala Arg
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  Gln Arg Arg Gln Ser Lys Glu Gln Asp Glu Val Arg His Gly Arg
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  Asp Lys Gly Leu Ile Asn Lys Glu Asn Thr Pro Ser Gly Phe Asn His
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  Leu Asp Asp Cys Ile Leu Asn Thr Gln Glu Val Glu Lys Val His Lys
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   Ser Ser Thr Lys Leu Ser Glu Leu His Asp Asn Gln Asp Gly Leu Val
   Asn Met Glu Ser Leu Asn Ser Thr Arg Ser His Glu Arg Thr Gly Pro
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   Asp Asp Phe Glu Trp Met Ser Asp Glu Arg Lys Gly Asn Glu Lys Asp
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Gly Gly His Thr Gln His Phe Glu Ser Pro Thr Met Lys Ile Gln Glu
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His Pro Ser Leu Ser Asp Thr Lys Gln Gln Arg Asn Gln Asp Ala Gly
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Asp Gln Glu Glu Ser Phe Val Ser Glu Val Pro Gln Ser Asp Leu Thr
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Ala Leu Cys Asp Glu Lys Asn Trp Glu Glu Pro Ile Pro Ala Phe Ser
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Ser Trp Gln Arg Glu Asn Ser Asp Ser Asp Glu Ala His Leu Ser Pro
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Gln Ala Gly Arg Leu Ile Arg Gln Leu Leu Asp Glu Asp Ser Asp Pro
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Met Leu Ser Pro Arg Phe Tyr Ala Tyr Gly Gln Ser Arg Gln Tyr Leu
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Asp Asp Thr Glu Val Pro Pro Ser Pro Pro Asn Ser His Ser Phe Met
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Arg Arg Arg Ser Ser Ser Leu Gly Ser Tyr Asp Asp Glu Gln Glu Asp
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Leu Thr Pro Ala Gln Leu Thr Arg Arg Ile Gln Ser Leu Lys Lys
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Ile Arg Lys Phe Glu Asp Arg Phe Glu Glu Glu Lys Lys Tyr Arg Pro
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Ser His Ser Asp Lys Ala Ala Asn Pro Glu Val Leu Lys Trp Thr Asn
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Asp Leu Ala Lys Phe Arg Arg Gln Leu Lys Glu Ser Lys Leu Lys Ile
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Ser Glu Glu Asp Leu Thr Pro Arg Met Arg Gln Arg Ser Asn Thr Leu
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 Pro Lys Ser Phe Gly Ser Gln Leu Glu Lys Glu Asp Glu Lys Lys Gln
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 Glu Leu Val Asp Lys Ala Ile Lys Pro Ser Val Glu Ala Thr Leu Glu
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 Ser Ile Gln Arg Lys Leu Gln Glu Lys Arg Ala Glu Ser Ser Arg Pro
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 Glu Asp Ile Lys Asp Met Thr Lys Asp Gln Ile Ala Asn Glu Lys Val
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 Ala Leu Gln Lys Ala Leu Leu Tyr Tyr Glu Ser Ile His Gly Arg Pro
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 Val Thr Lys Asn Glu Arg Gln Val Met Lys Pro Leu Tyr Asp Arg Tyr
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Arg Leu Val Lys Gln Ile Leu Ser Arg Ala Asn Thr Ile Pro Ile Ile
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 Gly Ser Pro Ser Ser Lys Arg Arg Ser Pro Leu Leu Gln Pro Ile Ile
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 Glu Gly Glu Thr Ala Ser Phe Phe Lys Glu Ile Lys Glu Glu Glu Glu
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 Gly Ser Glu Asp Asp Ser Asn Val Lys Pro Asp Phe Met Val Thr Leu
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 Lys Thr Asp Phe Ser Ala Arg Cys Phe Leu Asp Gln Phe Glu Asp Asp
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 Ala Asp Gly Phe Ile Ser Pro Met Asp Asp Lys Ile Pro Ser Lys Cys
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 Ser Gln Asp Thr Gly Leu Ser Asn Leu His Ala Ala Ser Ile Pro Glu
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620
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Leu Leu Glu His Leu Gln Glu Met Arg Glu Glu Lys Lys Arg Ile Arg
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Lys Lys Leu Arg Asp Phe Glu Asp Asn Phe Phe Arg Gln Asn Gly Arg
                                    650
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Asn Val Gln Lys Glu Asp Arg Thr Pro Met Ala Glu Glu Tyr Ser Glu
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Tyr Lys His Ile Lys Ala Lys Leu Arg Leu Leu Glu Val Leu Ile Ser
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 1080
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                                25
His Ile Lys Arg Ile Thr Asp Asn Asp Ile Gln Ser Leu Val Leu Glu
                            40
Ile Glu Gly Thr Asn Val Ser Thr Thr Tyr Ile Thr Cys Pro Ala Asp
                        55
Pro Lys Lys Thr Leu Gly Ile Lys Leu Pro Phe Leu Val Met Ile Ile
                    70
Lys Asn Leu Lys Lys Tyr Phe Thr Phe Glu Val Gln Val Leu Asp Asp
                                    90
Lys Asn Val Arg Arg Arg Phe Arg Ala Ser Asn Tyr Gln Ser Thr Thr
                                105
            100
Arg Val Lys Pro Phe Ile Cys Thr Met Pro Met Arg Leu Asp Asp Gly
                            120
                                                125
Trp Asn Gln Ile Gln Phe Asn Leu Leu Asp Phe Thr Arg Arg Ala Tyr
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                                            140
Gly Thr Asn Tyr Ile Glu Thr Leu Arg Val Gln Ile His Ala Asn Cys
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Arg Ile Arg Arg Val Tyr Phe Ser Asp Arg Leu Tyr Ser Glu Asp Glu
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Leu Pro Ala Glu Phe Lys Leu Tyr Leu Pro Val Gln Asn Lys Ala Lys
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 Gly Cys Pro Ala Val Arg Lys Ala Ser Ala Gly Ala Ala Ala Val
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Arg Glu Gly Glu Thr Pro Ala Glu Asp Ala Lys Leu Asp Arg Pro Gly
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Ser Glu Pro Ala Ser Val Ala Pro Asn Gln Asn Leu Leu Cys Ala Pro
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Arg Pro Pro Ser Thr Phe Met Ser Val Leu Leu Arg Gly Gln Val
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Asn Gly Lys Met Ser Pro Thr Arg Phe His Ala Asn Ser Met Gly Gln
                             40
Arg Ser Tyr Ser Phe Glu Ala Ser Glu Glu Asp Leu Asp Val Asn Asp
                         55
Lys Val Glu Glu Leu Met Arg Arg Asp Ser Ser Val Ile Lys Glu Glu
                                         75
Ile Lys Ala Phe Leu Ala Asn Arg Arg Ile Ser Gln Ala Val Asp Thr
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Ile Gly Lys Met Leu Phe Pro Ser Val His Ser Gly Leu Ile
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PCT/US00/08621 WO 00/58473

15

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Asn Val Lys Asp Leu Arg Pro Arg Ala Arg Thr Ile Leu Lys Trp Asn
Glu Leu Asn Val Gly Asp Val Val Met Val Asn Tyr Asn Val Glu Ser
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Pro Gly Gln Arg Gly Phe Trp Phe Asp Ala Glu Ile Thr Thr Leu Lys
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Thr Ile Ser Arg Thr Lys Lys Glu Leu Arg Val Lys Ile Phe Leu Gly
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Gly Ser Glu Gly Thr Leu Asn Asp Cys Lys Ile Ile Ser Val Asp Glu
            100
Ile Phe Lys Ile Glu Arg Pro Gly Ala His Pro Leu Ser Phe Ala Asp
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Gly Lys Phe Leu Arg Arg Asn Asp Pro Glu Cys Asp Leu Cys Gly Gly
                        135
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Asp Pro Glu Lys Lys Cys His Ser Cys Ser Cys Arg Val Cys Gly Gly
                                        155
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Lys His Glu Pro Asn Met Gln Leu Leu Cys Asp Glu Cys Asn Val Ala
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Tyr His Ile Tyr Cys Leu Asn Pro Pro Leu Asp Lys Val Pro Glu Glu
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Glu Tyr Trp Tyr Cys Pro Ser Cys Lys Thr Asp Ser Ser Glu Val Val
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720 -				cttccataac	•
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2160					

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Ile Leu Leu Glu Leu Ala Gln Asp Ile Asp Tyr Ala Leu Leu Pro Arg
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 Glu Ile Pro Gly Lys Gly Gly Pro Trp Glu Val Ile Val Lys Pro Arg
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                85
 Asn Ser Asp Gly Glu Phe Leu Asn Arg Leu Asn Arg Phe Leu Glu Glu
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 Glu Arg Arg Thr Val Ser Asp Met Asn Arg Val Leu Gly Ser Asp Thr
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 Asn Cys Ser Ala Pro Arg Val Thr Ile Ser Pro Glu Phe Trp Thr Trp
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 Ala Ser Ile Thr Val Glu Glu Cys Leu Ala Ala Leu Gln Gln Val Phe
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 Gly Pro Val Glu Ser His Lys Ile Ala Gln Val Lys Leu Cys Lys Ala
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 Tyr Gln Glu Ala Gly Glu Lys Val Ser Ser Phe Val Leu Arg Leu Glu
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 Pro Leu Leu Gln Arg Ala Val Glu Asn Asn Val Val Ser Arg Arg Asn
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 Val Asn Gln Thr Arg Leu Lys Arg Val Leu Ser Gly Ala Thr Leu Pro
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 Asp Lys Leu Arg Asp Lys Leu Lys Leu Met Lys Gln Arg Arg Lys Pro
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 Pro Gly Phe Leu Ala Leu Val Lys Leu Leu Arg Glu Glu Glu Trp
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 Glu Ala Thr Leu Gly Pro Asp Arg Glu Ser Leu Glu Gly Leu Glu Val
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 Ala Pro Arg Pro Pro Ala Arg Ile Thr Gly Val Gly Ala Val Pro Leu
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  Pro Ala Ser Gly Asn Ser Phe Asp Ala Arg Pro Ser Gln Gly Tyr Arg
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 Arg Arg Arg Gly Arg Gly Gln His Arg Arg Gly Gly Val Ala Arg Ala
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Lys Phe Ser Ile Arg Asn Arg Arg His His Cys Arg Leu Cys Gly Ser
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Ser Gln Ser Pro Asn Ser Val His Gly Ser Arg Arg Gly Ser Ile Ser
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Ser Met Ser Ser Val Ser Ser Val Leu Asp Glu Lys Asp Asp Asp Arg
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Gln Ile Asp Glu Lys Glu His Thr Pro Asp Ile Val Lys Leu Tyr Glu
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Lys Leu Arg Leu Cys Met Glu Lys Val Asp Gln Lys Ala Pro Glu Tyr
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Glu His Ala Ser Asp Leu Arg Val Glu Val Gln Lys Val Tyr Glu Leu
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 Ile Asp Ala Leu Ser Lys Lys Ile Leu Thr Leu Gly Leu Asn Gln Asp
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Pro Pro Pro His Pro Ser Asn Leu Arg Leu Gln Arg Met Ile Arg Tyr
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Ser Ala Thr Leu Phe Val Gln Glu Lys Leu Leu Gly Leu Met Ser Leu
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 Gly Glu Val Ala Ser Leu Arg Arg Gly Pro Ala Pro Leu Lys Lys Ala
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Glu Thr Pro Glu Gln Ile Arg Ala Pro Ser Gly Ile Ile Thr Ser Pro
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Arg Ala Asn Pro Gly Glu Ile Ile Thr Ile Ser Phe Gln Asp Phe Asp
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Tyr Lys Asn Ile Glu Ser Tyr Arg Ala Cys Gly Ser Thr Ile Pro Pro
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Pro Tyr Ile Ser Ser Gln Asp His Ile Trp Ile Arg Phe His Ser Asp
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Asp Asn Ile Ser Arg Lys Gly Phe Arg Leu Ala Tyr Phe Ser Gly Lys
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Lys Cys Ile Pro Glu Ala Trp Lys Cys Asn Asn Met Asp Glu Cys Gly
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Lys Leu Asp Gly Thr Gly Tyr Gly Asp Tyr Val Lys Ile Tyr Asp Gly
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Ser His Ala Pro Leu Thr Val Val Ser Ser Ser Gly Gln Ile Arg Val
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His Phe Cys Ala Asp Lys Val Asn Ala Ala Arg Gly Phe Asn Ala Thr
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Glu Phe Pro Cys Ser Arg Asn Gly Val Cys Tyr Pro Arg Ser Asp Arg
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Asp Glu Glu Asn Cys Pro Val Ile Val Pro Thr Arg Val Ile Thr Ala
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Gly Cys Thr Cys Lys Leu Tyr Ser Leu Arg Met Phe Glu Arg Arg Ser
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Phe Glu Thr Gln Leu Ser Arg Val Glu Ala Glu Leu Leu Arg Arg Glu
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Ala Pro Pro Ser Tyr Gly Gln Leu Ile Ala Gln Gly Leu Ile Pro Pro
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 Asn Leu Arg Leu Ala Val Arg Ser Gln Leu Gly Phe Thr Ser Val Arg
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 Phe Ala Arg Ser Arg His Ser Gly Ser Leu Ala Leu Val Ser Ala Asp
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 Gly Asp Glu Val Val Pro Ser Gln Ser Thr Ser Arg Glu Pro Glu Arg
                                        635
                    630
 Asn His Thr His Arg Ser Leu Phe Ser Val Glu Ser Asp Asp Thr Asp
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 Thr Glu Asn Glu Arg Arg Asp Met Ala Gly Ala Ser Gly Gly Val Ala
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 Ala Pro Leu Pro Gln Lys Val Pro Pro Thr Thr Ala Val Glu Ala Thr
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 Val Gly Ala Cys Ala Ser Ser Ser Thr Gln Ser Thr Arg Gly Gly His
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Pro Ala Arg His Gln Leu Thr Ser Ala Leu Ser Arg Met Thr Gln Gly
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Leu Arg Trp Val Arg Phe Thr Leu Gly Arg Ser Ser Ser Leu Ser Gln
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Asn Gin Ser Pro Leu Arg Gln Leu Asp Asn Gly Val Ser Gly Arg Glu
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Asp Asp Asp Val Glu Met Leu Ile Pro Ile Ser Asp Gly Ser Ser
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Asp Phe Asp Val Asn Asp Cys Ser Arg Pro Leu Leu Asp Leu Ala Ser
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Asp Gln Gly Gln Gly Leu Arg Gln Pro Tyr Asn Ala Thr Asn Pro Gly
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Val Arg Pro Ser Asn Arg Asp Gly Pro Cys Glu Arg Cys Gly Ile Val
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Trp Gly Met Lys Gly Ile Pro Val Pro Ser Gly His Pro Gln Ala Asp
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Gly Arg Arg Ala Leu Val Arg Ala Val Gly His Pro Gln Asp Leu Leu
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Thr Glu Ala Ser Pro Arg Cys Pro Ala Gly Pro Ser Pro Leu Arg Ser
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Thr Gly Arg Lys Pro Pro Gly Pro Pro Arg Gly Gly Asp Leu Ala Ala
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Pro Val Leu Phe Lys Ala Trp Ala Thr Ser Leu Ala Cys Pro Lys Trp
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Gln Ala Leu Arg Arg Ala Arg Met Val Pro Val Val Gln Gly Ser Pro
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Leu Glu Arg Glu Gly Pro Arg Ala Phe Tyr Arg Gly Tyr Leu Pro Asn
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Val Leu Gly Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu
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Thr Leu Lys Asn Trp Trp Leu Gln Gln Tyr Ser His Asp Ser Ala Asp
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Pro Gly Ile Leu Val Leu Leu Ala Cys Gly Thr Ile Ser Ser Thr Cys
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Gly Gln Ile Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met Gln
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Ala Gln Gly Phe His His Val Ala Gln Ala His Leu Glu Leu Val Gly
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 Asp Tyr Arg Tyr Gly Arg Val Glu Ser Val Lys Ile Leu Pro Lys Arg
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 Ser Ala Gln Lys Ala His Asn Ser Val Asn Lys Met Gly Asp Arg Asp
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 Leu Arg Thr Asp Tyr Asn Glu Pro Gly Thr Ile Pro Ser Ala Ala Arg
                             120
 Gly Leu Asp Asp Thr Val Ser Ile Ala Ser Arg Ser Arg Glu Val Ser
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 Gly Phe Arg Gly Gly Gly Gly Pro Ala Tyr Gly Pro Pro Pro Ser
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 Leu His Ala Arg Glu Gly Arg Tyr Glu Arg Arg Leu Asp Gly Ala Ser
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 Arg Gly Thr Gly Gly Phe Asp Arg Thr Arg His Tyr Asp Gln Asp Tyr
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 Tyr Arg Asp Pro Arg Glu Arg Thr Leu Gln His Gly Leu Tyr Tyr Ala
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 Glu Pro Arg Ala Arg Glu Gln Phe Thr Leu Pro Ser Val Val His Arg
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 Asp Ile Tyr Arg Asp Asp Ile Thr Arg Glu Val Arg Gly Arg Arg Pro
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1260

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PCT/US00/08621 WO 00/58473

735

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Trp Arg Val Gln Lys Ala Leu Leu Gln Lys Phe Thr Pro Glu Ile Lys
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Val Phe Ile Leu Pro Leu Asp Val Ser Thr Thr Ile Tyr Asn Arg Cys
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Lys His Ala Ala Gln Ile Gln Ala Leu Leu Arg Ile Ala Thr Leu Gln
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Asp Cys Ala Thr Ala Asn Pro Val Pro Ser Gln His Pro Cys Phe Lys
Pro Trp Ser Tyr Ile Pro Asp Gly Ile Met Pro Ile Phe Trp Arg Val
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Val Tyr Trp Thr Ser Gln Phe Leu Thr Trp Ile Leu Leu Pro Phe Met
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Gln Ser Tyr Ala Arg Ser Gly Gly Phe Ser Ile Thr Gly Lys Ile Lys
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Pro Leu Cys Cys Cys Val Gln Ala Trp His Leu Gln Asp Gly Asp
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Leu Thr Ile Ile Gln Thr Thr Gln Gly Phe Cys Arg Tyr Leu Glu Lys
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Gln Phe Ser Asp Leu Lys Gln Lys Gly Ile Val Ile Ser Phe Asp Ala
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Arg Ala His Pro Ser Ser Gly Gly Ser Ser Arg Arg Phe Ala Arg Leu
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Asp Ile Thr Pro Thr Pro Phe Val Pro Phe Thr Val Ser His Leu Lys
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PCT/US00/08621 WO 00/58473

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285

300

315

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Gly Lys Gly Val Leu Thr Leu Ser Phe Ala Leu Ala Asp Lys Thr Lys

Ala Arg Ile Val Leu Ala Asn Asp Pro Asp Ala Asp Arg Leu Ala Val

Ala Glu Lys Gln Asp Ser Gly Glu Trp Arg Val Phe Ser Gly Asn Glu

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295

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260

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Ile Gly Tyr Met Cys Cys Pro Phe Val Leu Asp Lys Asp Gly Val Ser
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Phe Glu Ser Cys Ile Gln Tyr Tyr Leu Glu Asn Asn Trp Leu Gln His
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Val Leu Ala Thr Gly Ser Gly Ile Val Ile Ile Arg Ser Cys Asp Asp
Val Ile Thr Gly Arg His Trp Leu Ala Arg Glu Tyr Val Trp Phe Leu
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Ile Pro Tyr Met Ile Tyr Asp Ser Tyr Ala Met Tyr Leu Cys Glu Trp
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Cys Arg Thr Arg Asp Gln Asn Arg Ala Pro Ser Leu Thr Leu Arg Asn
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Phe Leu Ser Arg Asn Arg Leu Met Ile Thr His His Ala Val Ile Leu
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Phe Val Leu Val Pro Val Ala Gln Arg Leu Arg Gly Asp Leu Gly Asp
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Tyr Lys Val Asn Gly Ile Leu Thr Leu Ala Thr Phe Leu Ser Cys Arg
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Pro Met Met Phe Leu Tyr Asn Tyr Ile Gly Gln Asp Gly Ile Ala Ser
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Glu Asp Tyr Leu His Met Val His Arg Leu Ser Ser Asp Asp Gly Asp
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Thr Ile Asp Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val
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Glu Asn Ile Pro Glu Ile Ile Leu Tyr Trp Lys His Ser Thr Ile Phe
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Asp Val Gly Glu Asn Leu Thr Val Pro Asp Glu Phe Thr Val Glu Glu
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Arg Gln Thr Gly Met Trp Trp Arg His Leu Val Ala Gly Gly Gly Ala
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Gly Ala Val Ser Arg Thr Cys Thr Ala Pro Leu Asp Arg Leu Lys Val
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Gly Phe Thr Gln Met Ile Arg Glu Gly Gly Ala Arg Ser Leu Trp Arg
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Gly Asn Gly Ile Asn Val Leu Lys Ile Ala Pro Glu Ser Ala Ile Lys
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Phe Met Ala Tyr Glu Gln Ile Lys Arg Leu Val Gly Ser Asp Gln Glu
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Thr Leu Arg Ile His Glu Arg Leu Val Ala Gly Ser Leu Ala Gly Ala
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Ile Ala Gln Ser Ser Ile Tyr Pro Met Glu Val Leu Lys Thr Arg Met
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Ala Leu Arg Lys Thr Gly Gln Tyr Ser Gly Met Leu Asp Cys Ala Arg
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Arg Ile Leu Ala Arg Glu Gly Val Ala Ala Phe Tyr Lys Gly Tyr Val
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                325
Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu Tyr
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Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val Ser Ile
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Tyr Asn Tyr Gly Ser Phe Glu Asn Val Ser Gly Ser Thr Asp Gly Leu
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Val Asp Ser Ala Gly Thr Gly Asp Leu Ser Tyr Gly Tyr Gln Gly Arg
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Ser Phe Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser
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Val Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys
                                    90
Asn Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg
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Lys Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn
                                                125
                            120
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Ile Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val
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Ile Thr Tyr Pro Glu Xaa Gly Gly Cys Thr Arg Gly Ser Arg Asp Ile
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Cys Ser Ser Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala
                                    170
Phe Asn Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu
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Phe Leu Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu
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Leu Arg Asn Asp Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe
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                                            220
Gly Leu Phe Tyr Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu
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                                        235
Ser Ala Cys Tyr His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Gly
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3378

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Asp Glu Thr Asn Lys Gly Thr Lys Thr Glu Gly Glu Thr Glu Val Lys
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Lys Asp Glu Ala Gly Glu Asn Tyr Ser Lys Asp Gln Gly Gly Arg Thr
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Leu Cys Gly Val Met Arg Ile Gly Leu Val Ala Lys Gly Leu Leu Ile
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Lys Asp Asp Met Asp Leu Glu Leu Val Leu Met Cys Lys Asp Lys Pro
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Thr Glu Thr Leu Leu Asn Thr Val Lys Asp Asn Leu Pro Ile Gln Ile
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Gln Lys Leu Thr Glu Glu Lys Tyr Gln Val Glu Gln Cys Val Asn Glu
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Ala Ser Ile Ile Ile Arg Asn Thr Lys Glu Pro Thr Leu Thr Leu Lys
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Val Ile Leu Thr Ser Pro Leu Ile Arg Asp Glu Leu Glu Lys Lys Asp
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Gly Glu Asn Val Ser Met Lys Asp Pro Pro Asp Leu Leu Asp Arg Gln
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Lys Cys Leu Asn Ala Leu Ala Ser Leu Arg His Ala Lys Trp Phe Gln
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Ala Arg Ala Asn Gly Leu Lys Ser Cys Val Ile Val Leu Arg Ile Leu
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Arg Asp Leu Cys Asn Arg Val Pro Thr Trp Ala Pro Leu Lys Gly Trp
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Pro Leu Glu Leu Ile Cys Glu Lys Ser Ile Gly Thr Cys Asn Arg Pro
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Leu Gly Ala Gly Glu Ala Leu Arg Arg Val Met Glu Cys Leu Ala Ser
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Gly Ile Leu Leu Pro Gly Gly Pro Gly Leu His Asp Pro Cys Glu Arg
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                            280
Asp Pro Thr Asp Ala Leu Ser Tyr Met Thr Ile Gln Gln Lys Glu Asp
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Ile Thr His Ser Ala Gln His Ala Leu Arg Leu Ser Ala Phe Gly Gln
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Ile Tyr Lys Val Leu Glu Met Asp Pro Leu Pro Ser Ser Lys Pro Phe
Gln Lys Tyr Ser Trp Ser Val Thr Asp Lys Glu Gly Ala Gly Ser Ser
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345

340

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Ala Leu Lys Arg Pro Phe Glu Asp Gly Leu Gly Asp Asp Lys Asp Pro
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Ile Asp Leu Met Asn Ala Leu Met Arg Leu Asn Gln Ile Arg Pro Gly
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Leu Gln Tyr Lys Leu Leu Ser Gln Ser Gly Pro Val His Ala Pro Val
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Phe Thr Met Ser Val Asp Val Asp Gly Thr Thr Tyr Glu Ala Ser Gly
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Pro Ser Lys Lys Thr Ala Lys Leu His Val Ala Val Lys Val Leu Gln
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Trp Arg Ala Val Gln Gly Ile Arg Gly Glu Thr Lys Ser Cys Gln Thr
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Ala Ser Ile Ala Thr Ala Ser Ala Ser Ala Gln Ala Arg Asn His Val
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Asp Ala Gln Val Gln Thr Glu Ala Pro Val Pro Val Ser Val Gln Pro
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Pro Ser Gln Tyr Asp Ile Pro Arg Leu Ala Ala Phe Leu Arg Arg Val
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Glu Ala Met Val Ile Arg Glu Leu Asn Lys Asn Trp Gln Ser His Ala
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Phe Asp Gly Phe Glu Val Asn Trp Thr Glu Gln Gln Met Val Ser
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Cys Leu Tyr Thr Leu Gly Tyr Pro Pro Ala Gln Ala Gln Gly Leu His
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Val Thr Ser Ile Ser Trp Asn Ser Thr Gly Ser Val Val Ala Cys Ala
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Tyr Gly Arg Leu Asp His Gly Asp Trp Ser Thr Leu Lys Ser Phe Val
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Cys Ala Trp Asn Leu Asp Arg Arg Asp Leu Arg Pro Gln Gln Pro Ser
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Ala Val Val Glu Val Pro Ser Ala Val Leu Cys Leu Ala Phe His Pro
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Pro Glu Pro Gly His Ser His Arg Phe Gln Val Leu Ser Val Ala Thr
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Asp Gly Lys Val Leu Leu Trp Gln Gly Ile Gly Val Gly Gln Leu Gln
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Pro Val Tyr Cys Leu Glu Phe Asn Ser Gln Gln Thr Gln Leu Leu Ala
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3383

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4500					ttggagaccg
4560					ttccgcccc
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5220				cctaattgat	
5280				tagacttatt	
5340		•		tggcactcac	
5400			•	tctaatacag	
5460			_	cagtacagct	
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5580				tgtgaacaag	
5640					agtgatagaa
5700					tggcgtaaga
5760					
5820					caatatgaga
5880					gtggtgtctt
E040					tgctggacgt
6000					gagatacatt
6060					cagggccctc
6120					tageettttg
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ctgcattgca					: tatagtttgg
atgttagtat	agaattttga	aattgggaat	t taaaaatcag	gactggggad	tgggagacca
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                           40
Ser Asp Arg Val Val Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
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Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
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Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
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Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
                              105
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Ile Cys Ile Gly
                                              125
                           120
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
                                          140
                       135
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
                                      155
                   150
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
                                   170
                165
 Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu
                               185
           180
 Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg
                           200
 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His
                       215
 Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Thr Leu Tyr Pro Val Ile
                                       235
                   230
 Lys Glu Glu Thr Asn His Ser Glu Met Ala Glu Asp Leu Cys Lys Ile
                                   250
                245
 Gly Ser Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala
                               265
            260
 Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu
                           280
 Ser Asp Thr Pro Tyr Asp Ser Ser Ala Ser Tyr Glu Lys Glu Asn Glu
                                           300
                        295
 Met Met Lys Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn
                                       315
                    310
 Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly
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             . 325
 Gly Ser Glu Val Val Pro Val Ile Ser Pro Met Tyr Gln Leu His Lys
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PCT/US00/08621 WO 00/58473

340

350

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Pro Leu Ala Glu Gly Thr Pro Arg Ser Asn His Ser Ala Gln Asp Ser
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Ala Val Glu Asn Leu Leu Leu Ser Lys Ala Lys Leu Val Pro Ser
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Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr
                                        395
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Glu Ser Asn Asn Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn
                                    410
His Ile Ala Pro His Ala Arg Asn Gly Leu Ser Leu Lys Glu Glu His
                                425
            420
Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala
                            440
Leu Arg Val Val Ser Thr Ser Gly Glu Gln Met Lys Val Tyr Lys Cys
                        455
Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His
                                        475
Met Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly
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Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly
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Glu His Arg Phe His Met Ser
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 gcccgggaca agagcaagct gatccagctg ggaatcaccc acgttgtgaa tgccgctgca
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            20
Phe Ala Thr Leu Ala Leu Ile Leu Leu Val Leu Leu Glu Ala Leu Ala
Gln Ala Asp Thr Gln Lys Met Val Glu Ala Gln Arg Gly Val Gly Pro
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Arg Ala Cys Tyr Ser Ile Trp Leu Leu Leu Ala Pro Thr Pro Pro Leu
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Ser His Cys Leu Gln Ser Pro Gln Lys Gln His Gln Val Cys Gly Asp
                                    90
Arg Arg Leu Lys Ala Ser Ser Thr Asn Cys Pro Ser Glu Lys Cys Thr
                                105
            100
Ala Trp Ala Arg Tyr Ser His Arg Met Asp Ser Leu Gln Lys Gln Asp
                            120
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Leu Arg Arg Pro Lys Ile His Gly Ala Val Gln Ala Ser Pro Tyr Gln
                        135
Pro Pro Thr Leu Ala Ser Leu Gln Arg Leu Leu Trp Val Arg Gln Ala
                                         155
                    150
Ala Thr Leu Asn His Ile Asp Glu Val Trp Pro Ser Leu Phe Leu Gly
                                     170
                165
Asp Ala Tyr Ala Ala Arg Asp Lys Ser Lys Leu Ile Gln Leu Gly Ile
                                185
Thr His Val Val Asn Ala Ala Gly Lys Phe Gln Val Asp Thr Gly
                             200
Ala Lys Phe Tyr Arg Gly Met Ser Leu Glu Tyr Tyr Gly Ile Glu Ala
                        215
                                             220
Asp Asp Asn Pro Phe Phe Asp Leu Ser Val Tyr Phe Leu Pro Val Ala
                    230
Arg Tyr Ile Arg Ala Ala Leu Ser Val Pro Gln Gly Arg Val Leu Val
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250

His Cys Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala Phe

245

255

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260
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Leu Met Ile Tyr Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr Val
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        275
                            280
Gln Ala His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln Leu
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Gln Val Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe
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tgtgctggca tcctgagcac tgccaggcac ttgaccattg agcagaagat ggcagactac
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<211> 148
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Asn Trp Ser Ser Ala Arg Asn Ser Ala Ser Ala Ala Glu Ala Arg Ser
Met Ala Leu Pro Thr Gln Ala Gln Val Val Ile Cys Gly Gly Gly Ile
Thr Gly Thr Ser Val Ala His His Gln Ser Lys Met Gly Trp Lys Asp
                        55
Ile Val Leu Leu Glu Gln Gly Arg Leu Ala Ala Gly Ser Thr Arg Phe
Cys Ala Gly Ile Leu Ser Thr Ala Arg His Leu Thr Ile Glu Gln Lys
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95
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                85
Met Ala Asp Tyr Ser Asn Lys Leu Tyr Tyr Gln Leu Glu Gln Glu Thr
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            100
Gly Ile Gln Thr Gly Tyr Thr Arg Thr Gly Ser Ile Phe Leu Ala Gln
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Thr Gln Asp Arg Leu Ile Ser Leu Lys Arg Ile Asn Ala Gly Leu Lys
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Tyr Val Arg Val
145
<210> 4199
<211> 1769
<212> DNA
<213> Homo sapiens
<400> 4199
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gacgeegeeg etegteegte etecegteeg ttetegetee eggeegeeat eatgetggeg
180
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240
acgetegtgg ggetgeagta etegggeaag accaeetteg teaatgteat egegteaggt
300
caattcagtg aagatatgat acccacagtg ggcttcaaca tgaggaaggt aactaaaggt
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 1020
 catcttaaat caagaaaatt gcatatttcc attctggtct ttctgggcca gattttata
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 1140
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1200
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1560
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gttctatctc cagtcattaa atcagtgctg ctgcatgaca ctcttaactc ctgacttttt
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<211> 186
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Trp Lys Glu Glu Met Glu Leu Thr Leu Val Gly Leu Gln Tyr Ser Gly
 1
                                25
 Lys Thr Thr Phe Val Asn Val Ile Ala Ser Gly Gln Phe Ser Glu Asp
 Met Ile Pro Thr Val Gly Phe Asn Met Arg Lys Val Thr Lys Gly Asn
 Val Thr Ile Lys Ile Trp Asp Ile Gly Gly Gln Pro Arg Phe Arg Ser
                                       75
                    70
 Met Trp Glu Arg Tyr Cys Arg Gly Val Asn Ala Ile Val Tyr Met Ile
 Asp Ala Ala Asp Arg Glu Lys Ile Glu Ala Ser Arg Asn Glu Leu His
                                105
             100
 Asn Leu Leu Asp Lys Pro Gln Leu Gln Gly Ile Pro Val Leu Val Leu
                            120
 Gly Asn Lys Arg Asp Leu Pro Gly Ala Leu Asp Glu Lys Glu Leu Ile
                        135
 Glu Lys Met Asn Leu Ser Ala Ile Gln Asp Arg Glu Ile Cys Cys Tyr
                                        155
                    150
 Ser Ile Ser Cys Lys Glu Lys Asp Asn Ile Asp Ile Thr Leu Gln Trp
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 Leu Ile Gln His Ser Lys Ser Arg Arg Ser
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congecent gaacggeete tgagtaceet econgengen thecatheae thechtegee
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 Ser Phe Ala Ser Leu Leu Asn Tyr Arg Asn Ile Trp Lys Asn Leu Leu
                                 25
 Ile Leu Gly Phe Thr Asn Phe Ile Ala His Ala Ile Arg His Cys Tyr
                             40
 Glm Pro Val Gly Gly Gly Ser Pro Ser Asp Phe Tyr Leu Cys Ser
                         55
 Leu Leu Ala Ser Gly Xaa Ala Ala Leu Ala Cys Val Phe Leu Gly Val
```

PCT/US00/08621 ·WO 00/58473

70

Thr Val Asp Arg Phe Gly Arg Arg Gly Ile Leu Leu Leu Ser Met Thr

90

65

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85
Leu Thr Gly Ile Ala Ser Leu Val Leu Leu Gly Leu Trp Asp Tyr Leu
                                                    110
                                105
            100
Asn Glu Ala Ala Ile Thr Thr Phe Ser Val Leu Gly Leu Phe Ser Ser
                            120
Gln Ala Ala Ala Ile Leu Ser Thr Leu Leu Ala Ala Glu Val Ile Pro
                        135
Thr Thr Val Arg Gly Arg Gly Leu Gly Leu Ile Met Ala Leu Gly Ala
                                        155
                    150
Leu Gly Gly Leu Ser Gly Pro Ala Gln Arg Leu His Met Gly His Gly
                                    170
                165
Ala Phe Leu Gln His Val Val Leu Ala Ala Cys Ala Leu Leu Cys Ile
                                185
            180
Leu Ser Ile Met Leu Leu Pro Glu Thr Lys Arg Lys Leu Leu Pro Glu
                                                 205
                            200
Val Leu Arg Asp Gly Glu Leu Cys Arg Arg Pro Ser Leu Leu Arg Gln
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Pro Thr Pro Thr Arg Cys Asp His Val Pro Leu Leu Ala Thr Pro Asn
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grettgeett aaacceteta titeetaaaa tatigiteet aaatggiatt ticaagigia
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1080
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<211> 80
<212> PRT
<213> Homo sapiens
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Leu Phe Tyr Asp Val Ile Thr Trp Ile Val Thr Gln Val Ala Ile Ser
            20
Tyr Thr Val Val Pro Phe Val Leu Leu Ser Ile Lys Pro Ser Leu Thr
                           40
Phe Tyr Ser Ser Trp Tyr Tyr Cys Leu His Ile Leu Gly Ile Leu Val
                       55
Leu Leu Leu Pro Val Lys Lys Asn Ser Lys Lys Glu Tyr Thr
                                       75
<210> 4205
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<212> DNA
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 240
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360				gccagctggg	
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Val	Asn		гÀг	GIN	vai	Asp		ьец	ALG	361	· ·	445	0,5		-1-
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		515	Tyr		Mor	Dho		Glu	Glu	Hic	Lvs		Phe	Glu	Glu
Val		Asn	Tyr	Ala	Mec	535	пеп	GIU	GIU	1110	540	-] -			
_	530	•	Ala	m	C1.,		Gly	Tla	Ser	T.eu		Lvs	Trp	Pro	Asn
		ьуs	Ald	ıyı	550	ALG	Gry			555		-1-			560
545	C	B	Ile	Two		Thr	Tur	T.e.11	Thr		Phe	Ile	Ala	Arq	Tyr
Val	Ser	Asp	TIE	565	Ser	1111		,, c	570	-1-				575	•
61	~1··	7	Lys		Glu	Ara	Δla	Ara		Leu	Phe	Glu	Gln	Ala	Leu
GIŞ	GIY	ALG	580		014	5		585					590		
7.00	Glar	Cve	Dro	Pro	Lvs	Tvr	Ala		Thr	Leu	Tyr	Leu	Leu	Tyr	Ala
Asp	GIY	595		110	2,0	- , -	600	-1-			•	605		•	
Gl n	T.011	Glu	Glu	Glu	Tro	Glv		Ala	Arq	His	Ala	Met	Ala	Val	Tyr
GIII	610		GIU			615					620				
Glu	Ara	Δla	Thr	Ara	Ala			Pro	Ala	Gln	Gln	Tyr	Asp	Met	Phe
625		,,,,,		5	630					635		_		~~	640
Acn	Tle	Tyr	Tle	Lvs	Ara	Ala	Ala	Glu	Ile	Tyr	Gly	Val	Thr	His	Thr
A911	110	-,-		645					650	•				655	
Ara	GIV	Tle	Tvr	Gln	Lvs	Ala	Ile	Glu	Val	Leu	Ser	Asp	Glu	His	Ala
n. 9	U -1		660					665					670		
Δra	Glu	Met	Cvs	Leu	Arq	Phe	Ala	Asp	Met	Glu	Cys	Lys	Leu	Gly	Glu
nr 9	010	675			J		680					685			
Tle	Asc	Aro	Ala	Ara	Ala	Ile	Tyr	Ser	Phe	Cys	Ser	Gln	Ile	Cys	Asp
	690					695					700				
Pro	Ara	Thr	Thr	Glv	Ala	Phe	Trp	Gln	Thr	Trp	Lys	Asp	Phe	Glu	Val
705	;				710					715					720
Aro	His	Glv	Asn	Glu	Asp	Thr	Ile	Arg	Glu	Met	Leu	Arg	Ile	Arg	Arg
				725					730					735	
Ser	Val	Glr	Ala	Thr	Tyr	Asn	Thr	Gln	Val	Asn	Phe	Met	Ala	Ser	Gln
			740)				745					750		
Met	Lev	Lvs	: Val	Ser	Gly	Ser	Ala	Thr	Gly	Thr	Val	Ser	Asp	Leu	Ala
		759	;				760					765			
Pro	Glv	Glr	. Ser	Gly	Met	Asp	Asp	Met	Lys	Leu	Leu	Glu	Gln	Arg	Ala
	4			-		_									

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780
                        775
    770
Glu Gln Leu Ala Ala Glu Ala Glu Arg Asp Gln Pro Leu Arg Ala Gln
                                        795
                    790
Ser Lys Ile Leu Phe Val Arg Ser Asp Ala Ser Arg Glu Glu Leu Ala
                                    810
                805
Glu Leu Ala Gln Gln Val Asn Pro Glu Glu Ile Gln Leu Gly Glu Asp
                                825
            820
Glu Asp Glu Asp Glu Met Asp Leu Glu Pro Asn Glu Val Arg Leu Glu
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  835
Gln Gln Ser Val Pro Ala Ala Val Phe Gly Ser Leu Lys Glu Asp
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agctggaaaa gagacgctcc acactgcgac gacaaccaac acatgggaca agctgagaaa
gtgcactcag gacttcgcgt gatgtcacca ccatggcaat acttagatcc tgttgcttaa
gcataccatg tcgctgaaag agggaaagaa aatgaaagag cgtcctttaa aaagacgtaa
300
aattacactt tcactactac tggttcctat ccttgtgcag taaagtacaa cctggccagg
gtttaccage tetacetgca actgagteag aaaggcaaag tagtcagett tgtecatget
gtacggaatt tgctccacaa acccccttgc tctaga
456
<210> 4212
<211> 81
<212> PRT
<213> Homo sapiens
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Met Leu Lys Gln Gln Asp Leu Ser Ile Ala Met Val Val Thr Ser Arg
Glu Val Leu Ser Ala Leu Ser Gln Leu Val Pro Cys Val Gly Cys Arg
            20
Arg Ser Val Glu Arg Leu Phe Ser Ser Leu Arg Val Trp Lys Ser Ala
                             40
Leu Asp Pro Tyr Ser Arg Pro Arg Glu Ser Val Val Thr Lys Arg Arg
                                             60
                         55
Arg Ala Arg Ala Phe Ile Phe Ser Ser Glu Lys Leu Gly Ala Ser Asp
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                                         75
65
Pro
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<211> 383
<212> DNA
<213> Homo sapiens
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atggaggcac gcgagggcat gcacctcaag aacgtggact tccgtgagtt catggtggcc
ttcccggacc cggcccggcc gccctggtac gcctgctcgt cggccttctg ggccgcggcg
ctgctcacgc tgtcgtggcc gctgcgagtg ctggccgagt accgcacggc ctacgcgcac
taccacgtgg agaagctgtt tggcctggag ggcccgggct cggccagcag cgcaggcggt
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acagtagaca gcacggagct cgg
383
<210> 4214
<211> 127
<212> PRT
<213> Homo sapiens
<400> 4214
Xaa Ala Tyr Leu Cys Gln Arg Ala Arg Phe Phe Ala Glu Asn Glu Gly
                 5
                                    10
Leu Asp Asp Tyr Met Glu Ala Arg Glu Gly Met His Leu Lys Asn Val
            20
                                25
Asp Phe Arg Glu Phe Met Val Ala Phe Pro Asp Pro Ala Arg Pro Pro
                            40
Trp Tyr Ala Cys Ser Ser Ala Phe Trp Ala Ala Ala Leu Leu Thr Leu
Ser Trp Pro Leu Arg Val Leu Ala Glu Tyr Arg Thr Ala Tyr Ala His
                    70
Tyr His Val Glu Lys Leu Phe Gly Leu Glu Gly Pro Gly Ser Ala Ser
                                    90
Ser Ala Gly Gly Leu Ser Pro Ser Asp Glu Leu Leu Pro Pro Leu
                                105
Thr His Arg Leu Pro Arg Val Asn Thr Val Asp Ser Thr Glu Leu
                            120
<210> 4215
<211> 939
<212> DNA
<213> Homo sapiens
<400> 4215
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ctggaagaaa gcaaagaaat ggatatcaaa cgtaaagaaa ataaaggcaa tgatacccct
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ttggccctag agagtacaaa cactgaaaag gagacaagcc tggaggaaac aaaaatcggg
180
gagateetga tecagggett gacagaagat atggtgaetg ttttaateeg ggeetgegtg
agcatgctgg gagtccctgt ggacccagat actttgcatg ccaccctttg tttctgtttg
300
agggtéacte ggggeeccea attagecatg atgtttgeag aactgaagaa taccegeatg
360
atcttgaatt tgacccagag ctcaggcttc aatgggttta ctcccctggt cacccttctc
ttaagacaca tcattgagga cccctgtacc cttcgtcata ccatggaaaa ggttgttcgc
teageageta caagtggage tggtageact acctetggtg ttgtgtetgg cageetegge
tetegggaga teaactacat eettegtgte ettgggeeag eegeatgeeg eaateeagae
atattcacag aagtggccaa ctgctgtatc cgcatcgccc ttcctgcccc tcgaggctca
ggaactgett cagatgatga atttgagaat ettagaatta aaggeeetaa tgetgtacag
ctggtgaaga ccaccccttt gaagccctca cctctgcctg tcatccctga tactatcaag
gaagtgatet atgatatget gaatgetetg getgeatace atgeteeaga ggaageagat
aaatetgate etaaacetgg ggttatgace caagaggttg gecageteet geaagacatg
ggtgatgatg tataccagca gtaccggtca cttacgcgt
939
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 <211> 287
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 <213> Homo sapiens
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Met Asp Ile Lys Arg Lys Glu Asn Lys Gly Asn Asp Thr Pro Leu Ala
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 Leu Glu Ser Thr Asn Thr Glu Lys Glu Thr Ser Leu Glu Glu Thr Lys
 Ile Gly Glu Ile Leu Ile Gln Gly Leu Thr Glu Asp Met Val Thr Val
                             40
         35
 Leu Ile Arg Ala Cys Val Ser Met Leu Gly Val Pro Val Asp Pro Asp
 Thr Leu His Ala Thr Leu Cys Phe Cys Leu Arg Val Thr Arg Gly Pro
                     70
 Gln Leu Ala Met Met Phe Ala Glu Leu Lys Asn Thr Arg Met Ile Leu
 Asn Leu Thr Gln Ser Ser Gly Phe Asn Gly Phe Thr Pro Leu Val Thr
                                 105
             100
 Leu Leu Leu Arg His Ile Ile Glu Asp Pro Cys Thr Leu Arg His Thr
                             120
 Met Glu Lys Val Val Arg Ser Ala Ala Thr Ser Gly Ala Gly Ser Thr
                         135
 Thr Ser Gly Val Val Ser Gly Ser Leu Gly Ser Arg Glu Ile Asn Tyr
```

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160
                                        155
                   150
Ile Leu Arg Val Leu Gly Pro Ala Ala Cys Arg Asn Pro Asp Ile Phe
                                    170
               165
Thr Glu Val Ala Asn Cys Cys Ile Arg Ile Ala Leu Pro Ala Pro Arg
                                185
           180
Gly Ser Gly Thr Ala Ser Asp Asp Glu Phe Glu Asn Leu Arg Ile Lys
                            200
Gly Pro Asn Ala Val Gln Leu Val Lys Thr Thr Pro Leu Lys Pro Ser
   210
Pro Leu Pro Val Ile Pro Asp Thr Ile Lys Glu Val Ile Tyr Asp Met
                                        235
                   230
Leu Asn Ala Leu Ala Ala Tyr His Ala Pro Glu Glu Ala Asp Lys Ser
                                    250
               245
Asp Pro Lys Pro Gly Val Met Thr Gln Glu Val Gly Gln Leu Leu Gln
                                                    270Met Gly Asp Asp
                                265
           260
Val Tyr Gln Gln Tyr Arg Ser Leu Thr Arg
                                                285
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<210> 4217
<211> 619
<212> DNA
<213> Homo sapiens
<400> 4217
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acatacacac acacacacaa ccagccacag gcccacaaag gtgtctctct ctttgtccct
gtetgetete tegeacteae acacacacat eteagecaca ggeccaceag agtetgtetg
tototttgto tototcacto tototcacao acatacacot cagocacagg cocacaaggg
tetetetet tgtecetgge teetetetet egeacactee cacacacaca catacagete
agecacagge ccaegagggt gtetetetet etetetetet eteacacaca caeacacaca
cacacacgcc tgtgcagctc cacaggggcc tggggcagga gacagatctg aatacacata
ccaccctgtg ctgtgagtgg ccactcccat ccaacaactg agactttctg ttactgggcc
aaggttttct gccaaactca cttcccttat aatgaatgaa ttatccctca gaaggttcca
cagtcctccc ctggcgcgc
619
<210> 4218
<211> 155
<212> PRT
<213> Homo sapiens
<400> 4218
Met His Thr Tyr Thr His Thr Pro Leu Ser His Arg Leu Thr Arg Val
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15
                                    10
 1
Ser Leu Val Ser Leu Ser Tyr Ile His Thr His Thr Gln Pro Ala Thr
                                25
Gly Pro Gln Arg Cys Leu Ser Leu Cys Pro Cys Leu Leu Ser Arg Thr
                            40
His Thr His Thr Ser Gln Pro Gln Ala His Gln Ser Leu Ser Val Ser
                                            60
Leu Ser Leu Ser Leu Ser Leu Thr His Ile His Leu Ser His Arg Pro
                                        75
                    70
Thr Arg Val Ser Leu Leu Val Pro Gly Ser Ser Leu Ser His Thr Pro
                                    90
                85
Thr His Thr His Thr Ala Gln Pro Gln Ala His Glu Gly Val Ser Leu
                                105
            100
Ser Leu Ser Leu Ser His Thr His Thr His Thr His Thr Pro Val Gln
                                                125
Leu His Arg Gly Leu Gly Gln Glu Thr Asp Leu Asn Thr His Thr Thr
                        135
Leu Cys Cys Glu Trp Pro Leu Pro Ser Asn Asn
                                         155
                    150
<210> 4219
<211> 774
<212> DNA
<213> Homo sapiens
<400> 4219
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ccgctgcagc agcggccacg gcagcgacaa cagcagcgtg ctgagcgggg agctcccgcc
ggccatgggg aagacggccc tgttctacca cagcggcggc agcagcggct acgagagcgt
gatgegggac agegaggeca eeggeagege gteeteggeg eaggaeteea egagegagaa
cagcagetee gtgggeggea ggtgeeggag ceteaagace eegaagaaac geteeaatee
aggtteteag agaeggagge ttateceage actatecetg gaeacetett eccetgtgag
aaaacccccc aacagcacag gcgtccgctg ggtggatggn nccccttgcg gagcagcccg
aggggccttg gggaaccttt gagattaaag tctnatgaaa tcgatgacgt ggagcgcctg
cageggegae gagggggtge cageaaggag gecatgtget teaatgeaaa getgaagatt
 ctggaacacc gccagcagag gatcgccgag gtccgcgcga agtacgagtg gctgatgaag
gagetggagg egaccaaaca gtatetgatg etggatecca acaagtgget eagtgaattt
gacttggagc aggtttggga gctggattcc ctggagtacc tggaggcact ggagtgtgtg
 acggagegee tggagageeg tgtcaactte tgcaaggeee atetcatgat gete
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<211> 258
<212> PRT
<213> Homo sapiens
<400> 4220
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Ala Glu Ala Pro Pro Leu Gln Gln Arg Pro Arg Gln Arg Gln Gln Gln
Arg Ala Glu Arg Gly Ala Pro Ala Gly His Gly Glu Asp Gly Pro Val
                            40
       35
Leu Pro Gln Arg Arg Gln Gln Arg Leu Arg Glu Arg Asp Ala Gly Gln
                        55
Arg Gly His Arg Gln Arg Val Leu Gly Ala Gly Leu His Glu Arg Glu
                                        75
                    70
Gln Gln Leu Arg Gly Arg Gln Val Pro Glu Pro Gln Asp Pro Glu Glu
                                    90
Thr Leu Gln Ser Arg Phe Ser Glu Thr Glu Ala Tyr Pro Ser Thr Ile
                                                    110
                                105
            100
Pro Gly His Leu Phe Pro Cys Glu Lys Thr Pro Gln Gln His Arg Arg
                            120
Pro Leu Gly Gly Trp Xaa Pro Leu Arg Ser Ser Pro Arg Gly Leu Gly
                                            140
                       135
Glu Pro Leu Arg Leu Lys Ser Xaa Glu Ile Asp Asp Val Glu Arg Leu
                                        155
                    150
Gln Arg Arg Gly Gly Ala Ser Lys Glu Ala Met Cys Phe Asn Ala
                                    170
                165
Lys Leu Lys Ile Leu Glu His Arg Gln Gln Arg Ile Ala Glu Val Arg
                                                     190
                                185
            180
Ala Lys Tyr Glu Trp Leu Met Lys Glu Leu Glu Ala Thr Lys Gln Tyr
                            200
        195
Leu Met Leu Asp Pro Asn Lys Trp Leu Ser Glu Phe Asp Leu Glu Gln
                         215
Val Trp Glu Leu Asp Ser Leu Glu Tyr Leu Glu Ala Leu Glu Cys Val
                                         235
Thr Glu Arg Leu Glu Ser Arg Val Asn Phe Cys Lys Ala His Leu Met
                                     250
 Met Leu
 <210> 4221
 <211> 789
 <212> DNA
 <213> Homo sapiens
 <400> 4221
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 tragererat ettggracag ttetratgra gaatattgra eccagtgtga actaacgeta
 gaagetteaa aetgtataaa tttaaatgta tttgcatatt ataaaaataa agataaacat
 atacatattt tacactagtt atggaacagc aatgaacgtc agtcgatccc tctttcacat
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ttaacagaac tgaaatctga gtgctctaaa tactgccacc tgtactgtaa ctatggctta
300
tatgtgcacg gaaaacaaaa tooctgagaa gocattogac ttttttttt tttctttct
tcaagtageg egeteettgg aggateacag ttetgaggtt caggttgtaa aacatttget
ccatgttete gtccatgett ecceccacca eccetteec acetetteec cagtegteca
aaaagcaccc tgcaagcacg cgttgtcact caagttcaca gaacacgctg gggtgagtgc
agagggtctg ccaggtgcaa aagatggtcc aggtgttcag atgctctctt ttctccatgg
aaatteeaca gecacaaacg teaetggttt etgtgetttt caccaacatt etteeettaa
aaattggtgc tcctaaagtc acagtttggg tacagtaaaa atgatggcat aaggaaaaga
agcactatct tttccactta attttccaag aaagtatgaa gatacttgga acaggggctg
atcacagtc
789
<210> 4222
<211> 127
<212> PRT
<213> Homo sapiens
 <400> 4222
Met Ala Tyr Met Cys Thr Glu Asn Lys Ile Pro Glu Lys Pro Phe Asp
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Phe Phe Phe Ser Phe Leu Gln Val Ala Arg Ser Leu Glu Asp His
 Ser Ser Glu Val Gln Val Val Lys His Leu Leu His Val Leu Val His
                             40
         35
 Ala Ser Pro His His Pro Leu Pro Thr Ser Ser Pro Val Val Gln Lys
 Ala Pro Cys Lys His Ala Leu Ser Leu Lys Phe Thr Glu His Ala Gly
                     70
 Val Ser Ala Glu Gly Leu Pro Gly Ala Lys Asp Gly Pro Gly Val Gln
 Met Leu Ser Phe Leu His Gly Asn Ser Thr Ala Thr Asn Val Thr Gly
                                 105
 Phe Cys Ala Phe His Gln His Ser Ser Leu Lys Asn Trp Cys Ser
 <210> 4223
 <211> 852
 <212> DNA
 <213> Homo sapiens
 <400> 4223
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 gaggeegtgg cetatttgea etcacteaag ategtgeaca ggaateteaa getggagaae
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ctggtttact acaaccggct gaagaactcg aagattgtca tcagtgactt ccatctggct
180
aagctagaaa atggcctcat caaggagccc tgtgggaccc ccgaagattt tgccccccaa
ggggaaggcc ggcagcggta tggacgccct gtggactgct gggccattgg agtcatcatg
300
tacatcctgc tttcaggcaa tccacctttc tatgaggagg tggaagaaga tgattatgag
aaccatgata agaatctctt ccgcaagatc ctggctggtg actatgagtt tgactctcca
420
tattgggatg atatttcgca ggcagccaaa gacctggtca caaggctgat ggaggtggag
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cagtocagoa oggotgoago ocagtoggoo toagocacag acaetgocae eccogggot
gcagaccgta gtgccacccc agccacagat ggaagtgcca ccccagccac tgatggcagt
gtcaccccag ccaccgatgg aagcatcact ccagccattg atgggagtgt caccccagcc
actgacagga gc
852
<210> 4224
<211> 284
<212> PRT
<213> Homo sapiens
<400> 4224
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Arg Gln Val Leu Glu Ala Val Ala Tyr Leu His Ser Leu Lys Ile Val
                                 25
His Arg Asn Leu Lys Leu Glu Asn Leu Val Tyr Tyr Asn Arg Leu Lys
Asn Ser Lys Ile Val Ile Ser Asp Phe His Leu Ala Lys Leu Glu Asn
                        55
Gly Leu Ile Lys Glu Pro Cys Gly Thr Pro Glu Asp Phe Ala Pro Gln
                                         75
Gly Glu Gly Arg Gln Arg Tyr Gly Arg Pro Val Asp Cys Trp Ala Ile
Gly Val Ile Met Tyr Ile Leu Leu Ser Gly Asn Pro Pro Phe Tyr Glu
                                 105
            100
Glu Val Glu Glu Asp Asp Tyr Glu Asn His Asp Lys Asn Leu Phe Arg
                             120
Lys Ile Leu Ala Gly Asp Tyr Glu Phe Asp Ser Pro Tyr Trp Asp Asp
                                             140
                         135
Ile Ser Gln Ala Ala Lys Asp Leu Val Thr Arg Leu Met Glu Val Glu
                                         155
                    150
Gln Asp Gln Arg Ile Thr Ala Glu Glu Ala Ile Ser His Glu Trp Ile
```

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170
                165
Ser Gly Asn Ala Ala Ser Asp Lys Asn Ile Lys Asp Gly Val Cys Ala
                                                    190
                                185
           180
Gln Ile Glu Lys Asn Phe Ala Arg Ala Lys Trp Lys Lys Ala Val Arg
                                                205
                            200
Val Thr Thr Leu Met Lys Arg Leu Arg Ala Pro Glu Gln Ser Ser Thr
                                            220
                        215
Ala Ala Ala Gln Ser Ala Ser Ala Thr Asp Thr Ala Thr Pro Gly Ala
                                        235
                    230
Ala Asp Arg Ser Ala Thr Pro Ala Thr Asp Gly Ser Ala Thr Pro Ala
                                    250
                245
Thr Asp Gly Ser Val Thr Pro Ala Thr Asp Gly Ser Ile Thr Pro Ala
                                265
            260
Ile Asp Gly Ser Val Thr Pro Ala Thr Asp Arg Ser
<210> 4225
<211> 470
<212> DNA
<213> Homo sapiens
<400> 4225
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gacagggtcc tacagttaac tgcagtcgac gcagacgaag ggtcaaatgg ggagatcaca
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accategete caggggtgga aatgatagte gggeggaett aegeaeteee ggtecaagea
geggataatg etecteetge aaageaaagg acteceatet geaetgtgta tattgaagtg
 cttccaccaa ataatcaaag ccctcctcgc ttcccacagc tgatgtatag ccttgaaatt
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 470
 <210> 4226
 <211> 156
 <212> PRT
 <213> Homo sapiens
 <400> 4226
 Xaa Val Gln Glu Ser Glu Pro Val Ile Val Asn Ile Gln Val Met Asp
                                    - 10
 Ala Asn Asp Asn Thr Pro Thr Phe Pro Glu Ile Ser Tyr Asp Val Tyr
                                 25
             20
 Val Tyr Thr Asp Met Arg Pro Gly Asp Arg Val Leu Gln Leu Thr Ala
                             40
 Val Asp Ala Asp Glu Gly Ser Asn Gly Glu Ile Thr Tyr Glu Ile Leu
                          55
 Val Gly Ala Gln Gly Asp Phe Ile Ile Asn Lys Thr Thr Gly Leu Ile
```

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80
                    70
                                        75
65
Thr Ile Ala Pro Gly Val Glu Met Ile Val Gly Arg Thr Tyr Ala Leu
                85
Pro Val Gln Ala Ala Asp Asn Ala Pro Pro Ala Lys Gln Arg Thr Pro
                                                    110
                                105
            100
Ile Cys Thr Val Tyr Ile Glu Val Leu Pro Pro Asn Asn Gln Ser Pro
                            120
Pro Arg Phe Pro Gln Leu Met Tyr Ser Leu Glu Ile Ser Glu Ala Met
                                            140
                        135
Arg Val Gly Ala Val Leu Leu Asn Leu Gln Ala Thr
                    150
145
<210> 4227
<211> 1199
<212> DNA
<213> Homo sapiens
<400> 4227
nnaagettat ggecagtgtt aattigttat tiettaaata aettieeett teattittaa
attataaatt taacttctaa catgttttat ggttaaaatt gtactttttt cctttagcga
cattcaaatg catcacaatc actttgtgaa attgttcgcc tgagcagaga ccagatgtta
caaattcaga acagtacaga gcccgacccc ctgcttgcca ctctagaaaa gcaagaaatt
atagagcagc ttctatcaaa tattttccac aaggagaaaa atgagtcagc catagtcagt
300
gcaatccaga tattgctgac tttacttgag acacgacgac caacatttga aggccatata
360
gagatetgee caccaggeat gagecattea gettgtteag taaacaagag tgttetagaa
gccatcagag gaagacttgg atcttttcat gaactcctgc tggagccacc caagaaaagt
gtgatgaaga ccacatgggg tgtgctggat cctcctgtgg ggaatacccg gttgaatgtc
attaggttga tatccagect gettcaaace aataccagea gtataaatgg ggacettatg
gagetgaata geattggagt catattgaae atgttettea agtataeatg gaataaettt
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gaaaatgcca caattaccga tcaagactcc actggtgata atttgttatt aaaacatctt
ttccaaaaat gtcaattaat agaacgaata cttgaagcct gggaaatgaa tgagaagaaa
caggetgagg gaggaagaeg geatggttae atgggaeaec taacgaggat agetaaetgt
atogtgcaca gcactgacaa gggccccaac agtgcattag tgcagcagct tatcaaaggt
aagttatttg tgaaatttga attacatttt tgttgggttg caggaaggat ttaagggtca
agtagaaatg catgtagcat ttttaatagt gatttgtggg acttctttat atttggcaaa
1080
```

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tratgtattt gaatgaggtt cttgagaatg tgtttgaaca gggttgtttt ttgggttgta
ttttatgttc atgtagttac agaccattcc ataagcattg gcaggcttgg ctggattca
<210> 4228
<211> 298
<212> PRT -
<213> Homo sapiens
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Ile Glu Ile Cys Pro Pro Gly Met Ser His Ser Ala Cys Ser Val Asn
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Lys Ser Val Leu Glu Ala Ile Arg Gly Arg Leu Gly Ser Phe His Glu
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 Glu Asn Ser Val Pro Pro Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro
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Leu Phe Arg Tyr Phe Asn Lys Val Val Asn Leu Arg Glu Ala Glu Arg
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Gln Cys Asp Arg Arg Leu Thr Leu Gln Gln Lys Glu His Glu Gln Lys
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Met Glu Thr Phe Lys Thr Tyr Glu Asp Lys Ile Gln Gln Leu Glu Lys
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650

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645

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Gln Pro Asn Pro Gln Lys Leu Trp Glu Asp Ile Pro Glu Leu Pro Pro
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Ile His Ser Ser Leu Ala Pro Pro Ser Gly His Met Leu Gly Asn Glu
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Asn Lys Thr Glu Thr Asp Asp Asn Gln Phe Thr Lys Ser His Ser Arg
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Leu Ser Ser Gln Ile Gln Val Val Gly Asn Val Gly Arg Leu His Gly
Val Thr Pro Val Lys Leu Cys Arg Lys Glu Leu Arg Gln Ile Ser Ala
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785
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 Ala Thr Gln Val Asn Ala Trp Asp His Thr Leu Ile Glu Asn Gly Glu
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 Leu Glu Phe Leu Leu Thr Tyr Leu Glu Glu Ser Thr Arg Asp Gln Ser
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Ala Phe Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu
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Thr Phe Glu Ala Thr Gln Asp Asp Met Val Thr Val Pro Lys Ser Pro
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Pro Ala Tyr Ala Arg Ser Ser Asp Met Tyr Ser His Met Gly Thr Met
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Pro Arg Pro Ser Ile Lys Lys Ala Gln Asn Ser Gln Ala Ala Arg Gln
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Ala Gln Glu Ala Gly Pro Lys Pro Asn Leu Val Pro Gly Gly Val Pro
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Asp Pro Pro Gly Leu Glu Ala Ala Lys Glu Val Met Val Lys Ala Thr
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Gly Pro Leu Glu Asp Thr Pro Ala Met Glu Pro Asn Pro Ser Ala Val
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Pro Glu Ala Gly Ser Asp Tyr Val Lys Phe Ser Lys Glu Lys Tyr Ile
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Lys Leu Ser Ser Thr Asp Leu Arg Ser His Ala Trp Tyr His Gly Arg
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 Lys Ala Val Ser Glu Gln Ser Gly Ala Ile Ile Tyr Cys Pro Val Asn
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 Ser His Met Lys Arg Arg Ser Val Thr Met Thr Asp Gly Leu Thr Ala
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 Arg Pro Arg Asp Ser Ile Arg Ser Cys Ala Leu Ser Met Asp Gln Ile
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Dro	Gln		Cys	Pro	Glv	Ser		Pro	Lvs	Thr	His		Glu	Ser	Asp
PIO	450	Deu	Cys	110	G ₂ y	455			-,-		460	1			•
Lvs		Pro	His	Thr	Ser		Ser	His	Thr	Leu	Gly	Lys	Ala	Ser	Pro
465	,				470					475	-	_			480
Ser	Pro	Ser	Leu	Ser	Ser	Tyr	Ser	Asp	Pro	Asp	Ser	Gly	His	Tyr	Cys
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Gln	Leu	Gln	Pro	Pro	Val	Arg	Gly	Ser	Arg	Glu	Trp	Ala	Ala	Thr	Glu
			500					505					510		
Thr	Ser	Ser	Gln	Gln	Ala	Arg	Ser	Tyr	Gly	Glu	Arg	Leu	Lys	Glu	Leu
		515					520					525			·
Ser	Glu	Asn	Gly	Ala	Pro		Gly	Asp	Trp	Gly		Thr	Phe	Thr	Val
	530			_		535	_			_	540	6 0)	nh -	~1 	C
	Ile	Val	Glu	Val		Ser	Ser	Phe	Asn		Ата	Thr	Pne	GIN	560
545	_	-1.			550	3	T. ~~~	Dwa	f 011	555	Val	Glv	f.em	T.011	
Leu	Leu	тте	Pro		Asp	ASII	Arg	PIO	570	GIU	val	Gry	ВСС	575	n- 9
T	1701	*	Glu	565	Leu	A 7 =	Glu	Val	_	Δla	Ara	Thr	Leu		Ara
гÀг	vai	гуз	580	Бец	пеп	ALG	Ų1 u	585	p		•••		590		3
Hic	Val	Thr	Lys	Val	Asp	Cvs	Leu		Ala	Arq	Ile	Leu	Gly	Val	Thr
		595	-1-				600			_		605	_		
Lvs	Glu		Gln	Thr	Leu	Met	Gly	Val	Arg	Trp	Gly	Met	Glu	Leu	Leu
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Thr	Leu	Pro	His	Gly	Arg	Gln	Leu	Arg	Leu		Leu	Leu	Glu	Arg	
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His	Thr	Met	Ser	Ile	Met	Leu	Ala	Val		Ile	Leu	Gly	Суѕ		Gly
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Ser	Ala	Glu	Glu	Arg	Ala	Ala	Leu		HIS	гÀг	Thr	TTG	670	Leu	Ald
- •		-	660 Arg	~ 1	Mh	Mob	~1	665	Mot	Dha	Ser	Dha		Δla	Val
AIA	GIU	675	Arg	GIY	III	Mec	680	Maii	Mec	FIIC	501	685	niu	****	
Mat	Gly		Leu	Asn	Met	Δla		Ile	Ser	Arq	Leu		Gln	Thr	Trp
i-iec	690	AIG	204	p		695					700				-
Val	Thr	Leu	Arg	Gln	Arq		Thr	Glu	Gly	Ala	Ile	Leu	Tyr	Glu	Lys
705					710					715					720
Lys	Leu	Lys	Pro	Phe	Leu	Lys	Ser	Leu	Asn	Glu	Gly	Lys	Glu	Gly	Pro
-		_		725					730					735	
Pro	Leu	Ser	Asn	Thr	Thr	Phe	Pro	His	Val	Leu	Pro	Leu		Thr	Leu
			740					745		_	~->		750	~ 3	
Leu		_	Asp								GIU			GIY	ser
							760				T 011	765		λla	N.r.a
Thr		His	GIY	Vai	Glu		vaı	Leu	Ala	HIS	780	GIU	AIG	Ala	Arg
m\	770	31-	His	776.0	C1.	775	LOU	Tur	Hig	Thr		Δla	Glu	Val	Lvs
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785	Gl n	Glv	Phe	Gln		Arg	Pro	Glu	Leu		Glu	Val	Phe	Ser	
Leu			- 110	805		3			810					815	
Glu	Phe	Gln	Met		Leu	Leu	Trp	Gly	Ser	Gln	Gly	Ala	Ser	Ser	Ser
~_u		~ 	820	3			- 2	825			-		830		
Gln	Ala	Arg		Tyr	Glu	Lys	Phe	Asp	Lys	Val	Leu	Thr	Ala	Leu	Ser
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Cys Trp Lys Val Ser Pro His Ile Lys Met Asp Leu Leu Gln Trp Ile
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Gln Ser Lys Thr Gln Ser Asp Gly Ser Thr Leu Gln Gln Gly Ser Leu
Glu Phe Phe Ser Cys Leu Tyr Glu Ile Gln Glu Glu Glu Phe Ile Gln
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Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn Ile Ala Ser
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Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg Cys Arg Ser
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Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala Asp Gly Glu
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Val Arg Val Ser Val Asn Val Leu Asn Lys Gln Lys Gly Ala Pro Leu
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Leu Phe Val Val Arg Gln Lys Glu Ala Val Val Ser Phe Gln Val Pro
                                   90
Leu Ile Leu Arg Gly Met Phe Gln Arg Lys Tyr Leu Tyr Gln Lys Val
                                                   110
                               105
Glu Arg Thr Leu Cys Gln Pro Pro Thr Lys Asn Glu Ser Glu Ile Gln
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                           120
Phe Phe Tyr Val Asp Val Ser Thr Leu Ser Pro Val Asn Thr Thr Tyr
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Gln Leu Arg Val Ser Arg Met Asp Asp Phe Val Leu Arg Thr Gly Glu
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Gln Phe Ser Phe Asn Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr
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                165
 Glu Phe Pro Glu Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn
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 Lys Ala Phe Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro
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                         200
 Val Tyr Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr
                        215
 Met Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
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 Asn Ser Phe Tyr Val Val Val Val Lys Thr Glu Asp Gln Ala Cys
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 Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro Val Asp
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 Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val
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 Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
                                            300
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 Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
                                         315
                    310
 Arg Gln Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
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                 325
 Glu Ser Ala Ser Leu Leu Gly His Pro Arg Val Leu Ala Asp Ser Phe
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  Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn
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Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro
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Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu
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                              425
Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile
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Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys
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                     455
Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr
                 470 475
Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr
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Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn
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Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile
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Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile
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Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp
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Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr
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Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr
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His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met
                          600
Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His
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Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile
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Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr
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Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val Leu Leu Val Met Gly
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Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro
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Asn Asp Phe Ala Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu
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1380
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Thr Asp Pro Asp Pro Glu Ser Gln Glu Leu Gln Ile Gly Gly Thr Cys
Pro Asp Ile Thr Lys Arg Tyr Leu Arg Leu Thr Cys Ala Pro Asp Pro
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Ser Thr Val Arg Pro Val Ala Val Leu Lys Lys Ser Leu Cys Met Val
                        55
Lys Cys His Trp Lys Glu Lys Gln Asp Tyr Ala Phe Ala Cys Glu Gln
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75

Met Lys Ser Ile Arg Gln Asp Leu Thr Val Gln Gly Ile Arg Thr Glu

70

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Phe Thr Val Glu Val Tyr Glu Thr His Ala Arg Ile Ala Leu Glu Lys
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Gly Asp His Glu Glu Phe Asn Gln Cys Gln Thr Gln Leu Lys Ser Leu
                            120
Tyr Ala Glu Asn Leu Pro Gly Asn Val Gly Glu Phe Thr Ala Tyr Arg
                                            140
                        135
Ile Leu Tyr Tyr Ile Phe Thr Lys Asn Ser Gly Asp Ile Thr Thr Glu
                                        155
                   150
Leu Ala Tyr Leu Thr Arg Glu Leu Lys Ala Asp Pro Cys Val Ala His
                                    170
               165
Ala Leu Ala Leu Arg Thr Ala Trp Ala Leu Gly Asn Tyr His Arg Phe
                                185
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Phe Arg Leu Tyr Cys His Ala Pro Cys Met Ser Gly Tyr Leu Val Asp
                                                205
                            200
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Lys Phe Ala Asp Arg Glu Arg Lys Val Ala Leu Lys Ala Met Ile Lys
                                            220
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Thr Tyr Val Val Pro Ser Ser Leu Leu Pro Leu Leu Phe Pro Ser Phe
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                    230
Arg Leu Ala Pro Pro Leu Arg Pro Ala Pro Gly Arg Arg Pro Pro Pro
                                    250
Ala Pro Asn Pro Cys Pro Gly Pro Cys Phe Pro Ile Ile Phe Leu His
                                                    270
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                                265
Ser Ala Leu Pro Ser Pro Val Pro Leu Ala Leu Leu Val Gly His Leu
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                            280
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Cys Val Pro Gly His Ser Ser Pro Ser Pro His Cys Ser Gln Leu Thr
                                            300
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Ala Ser Gly Ala Ser Ser Pro Pro His Leu Cys Val Ser Ser Ser Cys
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                    310
Ser Leu Leu Pro Gly Pro Pro Ser Ser Leu Leu Ala Leu Gly Phe Leu
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Arg Thr Leu Arg Ser Leu Leu Ser Gln Leu Val Ala Val Leu Pro Pro
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gacgeettgg geggtteege ggteeetgtg egetteeace tteacceaga aggaettete
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Pro Ala Ser Ser Glu Pro Met Pro Glu Asp Ala Leu Gly Gly Ser Ala
Val Pro Val Arg Phe His Leu His Pro Glu Gly Leu Leu Trp Cys Ser
Arg Cys Phe Phe Ser His Gly Pro Lys Gly Ser Glu Pro Pro Gly Arg
                    70
Ser Ala Gly Leu Gln Gly Ala Thr Glu Arg Ser Gly Arg Pro Ser Val
Gln Ala Gln Ala Gln Ala Cys Glu Asn Leu Val Pro Ala Thr Val Trp
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Gly Val Leu Arg Ile Tyr Ser Gly Ser Leu Met Gly Gln Ala Leu Asp
                            40
Pro Thr Arg Lys Gln Trp Tyr Leu His Ala Val Ala Asn Pro Gly Leu
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Ile Ser Leu Thr Gly Pro Tyr Leu Asp Val Gly Gly Ala Gly Tyr Val
                    70
Val Thr Ile Ser His Thr Ile His Ser Ser Ser Thr Gln Leu Ser Ser
                                    90
Gly His Thr Val Ala Val Met Gly Ile Asp Phe Thr Leu Arg Tyr Phe
                                105
            100
Tyr Lys Val Leu Met Asp Leu Leu Pro Val Cys Asn Gln Asp Gly Gly
                            120
        115
Asn Lys Ile Arg Cys Phe Ile Met Glu Asp Arg Gly Tyr Leu Val Ala
                                            140
                        135
His Pro Thr Leu Ile Asp Pro Lys Gly His Ala Pro Val Glu Gln Gln
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155

170

His Ile Thr His Lys Glu Pro Leu Val Ala Asn Asp Ile Leu Asn His

150

165

145

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Pro Asn Phe Val Lys Lys Asn Leu Cys Asn Ser Phe Ser Asp Arg Thr
                               185
           180
Val Gln Arg Phe Tyr Lys Phe Asn Thr Ser Leu Ala Gly Asp Leu Thr
                                              205
                           200
Asn Leu Val His Gly Ser His Cys Ser Lys Tyr Arg Leu Ala Arg Ile
                       215
Pro Gly Thr Asn Ala Phe Val Gly Ile Val Asn Glu Thr Cys Asp Ser
                   230
Leu Ala Phe Cys Ala Cys Ser Met Val Asp Arg Leu Cys Leu Asn Cys
                                  250
               245
His Arg Met Glu Gln Asn Glu Cys Glu Cys Pro Cys Glu Cys Pro Leu
                                                  270
                               265
           260
Glu Val Asn Glu Cys Thr Gly Asn Leu Thr Asn Ala Glu Asn Arg Asn
                           280
Pro Ser Cys Glu Val His Gln Glu Pro Val Thr Tyr Thr Ala Ile Asp
                                          300
                       295
Pro Gly Leu Gln Asp Ala Leu His Gln Cys Val Asn Ser Arg Cys Ser
                                      315
                   310
Gln Arg Leu Glu Ser Gly Asp Cys Phe Gly Val Leu Asp Cys Glu Trp
                                   330
Cys Met Val Asp Ser Asp Gly Lys Thr His Leu Asp Lys Pro Tyr Cys
           340
Ala Pro Gln Lys Glu Cys Phe Gly Gly Ile Val Gly Ala Lys Ser Pro
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Tyr Val Asp Asp Met Gly Ala Ile Gly Asp Glu Val Ile Thr Leu Lys
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<212> DNA
<213> Homo sapiens
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gccacaccat cactccacac ctctgaccaa agcccgggga agcacatggt caccatggat
540
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Asp Gln Ser Pro Gly Lys His Met Val Thr Met Asp Gly Val Arg Glu
Glu Asp Leu Ala Pro Phe Ser Leu Arg Lys Arg Trp Glu Ser Glu Pro
His Pro Tyr Val Phe Phe Asn Asp Asp His Thr Thr Met Thr Phe Ile
                        55
Gly Phe His Leu Gln Pro Asn Ile Asn Gly Ser Val Asp Ala Ile Ser
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                                        75
His Leu Thr Gly Lys Val Ile Lys Arg Asp Val Met Thr Arg Asp Leu
                                    90
Tyr Gln Gly Leu Leu Gln Arg Val Pro Phe Asn Val Asp Phe Asp
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105
            100
Lys Leu Pro Arg His Lys Lys Leu Glu Arg Leu Cys Leu Thr Leu Gly
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Ile Pro Gln Ala Thr Asp Pro Asp Lys Thr Tyr Glu Leu Thr Thr Asp
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                        135
Asn Met Leu Lys Ile Leu Ala Ile Glu Met Arg Phe Arg Cys Gly Ile
                                        155
                    150
Pro Val Ile Ile Met Gly Glu Thr Gly Cys Gly Lys Thr Arg Leu Ile
                                    170
                165
Lys Phe Leu Ser Asp Leu Arg Arg Gly Gly Thr Asn Ala Asp Thr Ile
                                                    190
                                185
Lys Leu Val Lys Val His Gly Gly Thr Thr Ala Asp Met Ile Tyr Ser
                            200
Arg Val Arg Glu Ala Glu Asn Val Ala Phe Ala Asn Lys Asp Gln His
                                            220
                        215
Gln Leu Asp Thr Ile Leu Phe Phe Asp Glu Ala Asn Thr Thr Glu Ala
                   230
                                        235
Ile Ser Cys Ile Lys Glu Val Leu Cys Asp His Met Val Asp Gly Gln
                                    250
Pro Leu Ala Glu Asp Ser Gly Leu His Ile Ile Ala Ala Cys Asn Pro
                                                    270
            260
                                265
Tyr Pro Glu Asn Ser Glu Glu Met Ile Cys Arg Leu Glu Ser Ala Gly
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Leu Gly Tyr Arg Val Ser Met Glu Glu Thr Ala Asp Arg Leu Gly Ser
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Ile Pro Leu Gly Tyr Thr Cys Thr Gln Arg
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Gly Glu Pro Ala Pro Glu Glu Pro Pro Pro Ala Pro Arg Pro Ser Arg
Glu Gln Lys Cys Val Lys Cys Lys Glu Ala Gln Pro Val Val Val Ile
Arg Ala Gly Asp Ala Phe Cys Arg Asp Cys Phe Lys Ala Phe Tyr Val
His Lys Phe Arg Ala Met Leu Gly Lys Asn Arg Leu Ile Phe Pro Gly
Glu Lys Val Leu Leu Ala Trp Ser Gly Gly Pro Ser Ser Ser Met
                                    90
Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser Ala Lys Arg Leu
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Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly Ala
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592
<210> 4262
<211> 156
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Ile Leu Arg Ser Thr Leu Val Asn Lys Glu Pro Asp Ser Met Leu Ala
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His Met Phe Lys Asp Lys Gly Val Trp Gly Asn Lys Gln Asp His Arg
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PCT/US00/08621 WO 00/58473

30

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Gly Ala Phe Leu Ile Asp Arg Ser Pro Glu Tyr Phe Glu Pro Ile Leu
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Asn Tyr Leu Arg His Gly Gln Leu Ile Val Asn Asp Gly Ile Asn Leu
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Leu Gly Val Leu Glu Glu Ala Arg Phe Phe Gly Ile Asp Ser Leu Ile
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Glu His Leu Glu Val Ala Ile Lys Asn Ser Gln Pro Pro Glu Asp His
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Ser Pro Ile Ser Arg Lys Glu Phe Val Arg Phe Leu Leu Ala Thr Pro
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Thr Lys Ser Glu Leu Arg Cys Gln Gly Leu Asn Phe Ser Gly Ala Asp
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Leu Ser Arg Leu Asp Leu Arg Tyr Ile Asn Phe Lys Met Ala Asn Leu
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Ser Arg Cys Asn Leu Ala His Ala Asn Leu Cys Cys
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Gln Arg Arg Pro Ser Val Gly Ser Gln Ser Asn Gln Ala Gly Gln Gly
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Thr Ala Ala Arg Asp Met Ile Asn Met Lys Ala Leu Ala Ala Leu Lys
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Arg Gly Arg Ala Ser Ser Glu Ser Gln Gly Leu Gly Ala Gly Val Arg
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Glu Asn Ser Arg Pro Arg Arg Ser Cys Thr Leu Glu Gly Gly Ala Lys
Asn Tyr Ala Glu Ser Asp His Ser Glu Asp Glu Asp Asn Asn Asn
    50
Ser Ala Thr Ala Glu Glu Ser Thr Lys Lys Asn Lys Lys Pro Pro
Lys Lys Lys Ser Arg Tyr Glu Arg Thr Asp Thr Gly Glu Ile Thr Ser
                                    90
                85
Tyr Ile Thr Glu Asp Asp Val Val Tyr Arg Pro Gly Asp Cys Val Tyr
                                105
Ile Glu Ser Arg Arg Pro Asn Thr Pro Tyr Phe Ile Cys Ser Ile Gln
                                                125
                            120
Asp Phe Lys Leu Val His Asn Ser Gln Ala Cys Cys Arg Ser Pro Thr
                                            140
                        135
Pro Ala Leu Cys Asp Pro Pro Ala Cys Ser Leu Pro Val Ala Ser Gln
                                        155
                    150
Pro Pro Gln His Leu Ser Glu Ala Gly Arg Gly Pro Val Gly Ser Lys
                                    170
                165
Arg Asp His Leu Leu Met Asn Val Lys Trp Tyr Tyr Arg Gln Ser Glu
                                                    190
                                185
            180
Val Pro Asp Ser Val Tyr Gln His Leu Val Gln Asp Arg His Asn Glu
                            200
Asn Asp Ser Gly Arg Glu Leu Val Ile Thr Asp Pro Val Ile Lys Asn
                                            220
                        215
Arg Glu Leu Phe Ile Ser Asp Tyr Val Asp Thr Tyr His Ala Ala Ala
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Leu Arg Gly Lys Cys Asn Ile Leu His Phe Ser Asp Ile
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atcettgeag agttgaceaa gageeagaag gtttteteag aaaagetgga eeacetgage
cgccgtcttg cctgggtcca tgccactgtc tactcccagg agaagatgct ggacatctac
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gggtaccgct atacacggct gccacatctg ctgaaaacca aacttgagga cgccaatttg
cccagcetec agaageeetg ccettecace etgetgeage ageacatgge ggaceteeta
cagcagggtc ctgatgtggc acccagcttc ctcaacagcg tcctcaatca gctcaactgg
geettetetg aatteattgg catgatecaa gagatecage aggetgetga gegeetggag
960
cggaactttg tggacagccg gcagctcaag gtatgtgcca cctgctttga cctctcggtc
1020
agectgetge gtgtettgga gatgaetate acaetggtge etgagatatt cettgaetgg
acceggeeta cetetgagat getgetgegg egtettgeac agetgetaaa eeaggtgetg
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ctagagagcg tggaccacta tcccattctg gtggcagtga cgggcatcct ggtgcagctc
ctggtgcgtg gcccagcctc agagagagag caagccacat cagtgctcct ggcagatccc
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1500
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caggcagcag etgeeteect geccaccagt gaggaggace tetgeeccat etgetatgee
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Val Ser Asp Asp Val Asn Glu Tyr Ala Met Ala Leu Arg Asp Thr Glu
                            40
Asp Lys Leu Arg Arg Cys Pro Lys Arg Arg Lys Asp Ile Leu Ala Glu
Leu Thr Lys Ser Gln Lys Val Phe Ser Glu Lys Leu Asp His Leu Ser
                                        75
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Arg Arg Leu Ala Trp Val His Ala Thr Val Tyr Ser Gln Glu Lys Met
                                    90
Leu Asp Ile Tyr Trp Leu Leu Arg Val Cys Leu Arg Thr Ile Glu His
                                105
            100
Gly Asp Arg Thr Gly Ser Leu Phe Ala Phe Met Pro Glu Phe Tyr Leu
                                                 125
                            120
        115
Ser Val Ala Ile Asn Ser Tyr Ser Ala Leu Lys Asn Tyr Phe Gly Pro
                                             140
                        135
Val His Ser Met Glu Glu Leu Pro Gly Tyr Glu Glu Thr Leu Thr Arg
                                         155
                    150
Leu Ala Ala Ile Leu Ala Lys His Phe Ala Asp Ala Arg Ile Val Gly
                165
                                    170
Thr Asp Ile Arg Asp Ser Leu Met Gln Ala Leu Ala Ser Tyr Val Cys
                                                     190
            180
                                 185
Tyr Pro His Ser Leu Arg Ala Val Glu Arg Ile Pro Glu Glu Gln Arg
                             200
Ile Ala Met Val Arg Asn Leu Leu Ala Pro Tyr Glu Gln Arg Pro Trp
                                             220
                         215
Ala Gln Thr Asn Trp Ile Leu Val Arg Leu Trp Arg Gly Cys Gly Phe
                    230
Gly Tyr Arg Tyr Thr Arg Leu Pro His Leu Leu Lys Thr Lys Leu Glu
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250

245

255

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Asp Ala Asn Leu Pro Ser Leu Gln Lys Pro Cys Pro Ser Thr Leu Leu
           260
Gln Gln His Met Ala Asp Leu Leu Gln Gln Gly Pro Asp Val Ala Pro
                            280
Ser Phe Leu Asn Ser Val Leu Asn Gln Leu Asn Trp Ala Phe Ser Glu
                                            300
                       295
Phe Ile Gly Met Ile Gln Glu Ile Gln Gln Ala Ala Glu Arg Leu Glu
                                       315
                   310
Arg Asn Phe Val Asp Ser Arg Gln Leu Lys Val Cys Ala Thr Cys Phe
                                   330
                325
Asp Leu Ser Val Ser Leu Leu Arg Val Leu Glu Met Thr Ile Thr Leu
                               345
           340
Val Pro Glu Ile Phe Leu Asp Trp Thr Arg Pro Thr Ser Glu Met Leu
                           360
Leu Arg Arg Leu Ala Gln Leu Leu Asn Gln Val Leu Asn Arg Val Thr
                                            380
                        375
Ala Glu Arg Asn Leu Phe Asp Arg Val Val Thr Leu Arg Leu Pro Gly
                                        395
                   390
Leu Glu Ser Val Asp His Tyr Pro Ile Leu Val Ala Val Thr Gly Ile
                                   410
Leu Val Gln Leu Leu Val Arg Gly Pro Ala Ser Glu Arg Glu Gln Ala
                                425
            420
Thr Ser Val Leu Leu Ala Asp Pro Cys Phe Gln Leu Arg Ser Ile Cys
                                                445
                            440
        435
Tyr Leu Leu Gly Gln Pro Glu Pro Pro Ala Pro Gly Thr Ala Leu Pro
                        455
Ala Pro Asp Arg Lys Arg Phe Ser Leu Gln Ser Tyr Ala Asp Tyr Ile
                                        475
                    470
Ser Ala Asp Glu Leu Ala Gln Val Glu Gln Met Leu Ala His Leu Thr
                                    490
                485
Ser Ala Ser Ala Gln Ala Ala Ala Ser Leu Pro Thr Ser Glu Glu
                                505
            500
Asp Leu Cys Pro Ile Cys Tyr Ala His Pro Ile Ser Ala Val Phe Gln
                            520
Pro Cys Gly His Lys Ser Cys Lys Ala Cys Ile Asn Gln His Leu Met
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Asn Asn Lys Asp Cys Phe Phe Cys Lys Thr Thr Ile Val Ser Val Glu
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Asp Trp Glu Lys Gly Ala Asn Thr Ser Thr Thr Ser Ser Ala Ala
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 <400> 4281
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 getgaetetg agaggeagtg ggetteeege cageacetee ecetateaca titgtaggge
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tggtttatga ggccggaagt aagcaagcac cccctcatat caacctggca cttcacaccc
cccatggtta tcagtggggg tgctggctgg ctggcaggca gccagagaca tttcagcagg
tcaggcatgg atgcaggtgg aaatgagaga ggatcagtga gcgcattcat gtcttttgag
tggtctacag atgagtggtc tccagtctca aatgaggaga acaaataggg aagtaggagc
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507
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<211> 106
<212> PRT
<213> Homo sapiens
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Asp Leu Leu Lys Cys Leu Trp Leu Pro Ala Ser Gln Pro Ala Pro Pro
                                25
Leu Ile Thr Met Gly Gly Val Lys Cys Gln Val Asp Met Arg Gly Cys
                            4.0
Leu Leu Thr Ser Gly Leu Ile Asn Gln Pro Tyr Lys Cys Asp Arg Gly
                        55
Arg Cys Trp Arg Glu Ala His Cys Leu Ser Glu Ser Ala Gln Arg Thr
                                        75
Glu Ser Gly Asp Ser Trp Gln Lys Arg Gly Gly Leu Arg Leu Trp Gly
Ile Trp Pro Ile Gly Gln Leu Trp Gly Ser
<210> 4283
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gggagaaacc gagtccccgc cgggtcccca ccgtgtggcg ccgaccgaaa taactccagt
ccagctgcaa aaaccctccc gaaaacccaa gcttgtccgg cacaacttcg gtctctccag
ceteatteet geoegeacte egecaaactg etegecetge ceagegeage ggatgeageg
ctcccggccc nacgg
315
<210> 4284
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<211> 91
<212> PRT
<213> Homo sapiens
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Ser Asn Gly Gln Gly Arg Gly Ala Gly Gly Pro Gly Glu Thr Glu Ser
Pro Pro Gly Pro His Arg Val Ala Pro Thr Glu Ile Thr Pro Val Gln
Leu Gln Lys Pro Ser Arg Lys Pro Lys Leu Val Arg His Asn Phe Gly
Leu Ser Ser Leu Ile Pro Ala Arg Thr Pro Pro Asn Cys Ser Pro Cys
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Pro Ala Gln Arg Met Gln Arg Ser Arg Pro Xaa
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<211> 591
<212> DNA
<213> Homo sapiens
<400> 4285
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aaaatcctga ccaagatgaa gcagcagggt catgagacag ccgcctgtcc ggagactgaa
120
gagataccgc agggagccag tggctgctgg aaggatgacc tccagaagga actgagtgat
atatggtgat geccageetg cagtetgace cetgaceete etetgaacee gtteececaa
egggatetgg cagtgaccac cagaacctgg ageccacetg agtecagaet tecetcacee
cctaggactc accccaccac ggcccccaac cttagctgta ctgctgtcta caccctgagc
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420
ctgcaggact ccatagacag cctcactttg tgctcggggg cctgtcccaa ggcctcgagc
ctaagaggcc acaagggcac cagtgcctga gccctccact cccctcctgg gactctgact
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591
<210> 4286
<211> 106
<212> PRT
<213> Homo sapiens
<400> 4286
Cys Pro Ala Cys Ser Leu Thr Pro Asp Pro Pro Leu Asn Pro Phe Pro
Gln Arg Asp Leu Ala Val Thr Thr Arg Thr Trp Ser Pro Pro Glu Ser
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Arg Leu Pro Ser Pro Pro Arg Thr His Pro Thr Thr Ala Pro Asn Leu
                            40
Ser Cys Thr Ala Val Tyr Thr Leu Ser Ser Val Glu Ser Pro Ser Ala
                                            60
                        55
Pro Ser Ser Leu Ser Ser Cys Arg Ser Ala Val His Val Leu Gln Asp
                                        75
65
Ser Ile Asp Ser Leu Thr Leu Cys Ser Gly Ala Cys Pro Lys Ala Ser
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                85
Ser Leu Arg Gly His Lys Gly Thr Ser Ala
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<210> 4287
<211> 868
<212> DNA
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cggaaagcta cagtgttgaa gacatggatg agggtagcga cgaagtcggg gaggaagaga
tggttgaagg caacgactat gaagaattcg gtgcgtttgg tggctatggc accctcacca
getttgacat ccatatecte agageetteg gaagettggg tecaggeett egeatettat
cgaatgagec ctgggaactg gaaaaccnet gtgetggeec agaecetggt ggaggeattg
cagetggate eggaaacaet tgecaatgag aeggeegeee gtgetgeeaa egtageeege
geegeegeet ccaacegtge ggetegggee getgeegeeg etgeeegtae egeetteagt
 480
caggtggtcg ctagccaccg ggtggccacg ccgcaggtct caggagagga tacccagccc
 540
 acgacetacg ccgccgagge tcaggggccc acccctgage caccccttgc ttetccgcag
 600
 accteccaga tgttagteac cagtaagatg getgeeceeg aggeteegge aaceteegea
 cagteceaga caggeteece ggeecaggag getgetaetg agggeectag tagegeetgt
 gcattetete aggeteegtg tgccagggag gtggacgeca accggeceag cacageette
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 gcgcccaaga gacctgccca gccaagag
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 <210> 4288
 <211> 240
 <212> PRT
 <213> Homo sapiens
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PCT/US00/08621 WO 00/58473

Met Arg Val Ala Thr Lys Ser Gly Arg Lys Arg Trp Leu Lys Ala Thr

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<400> 4288

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Thr Met Lys Asn Ser Val Arg Leu Val Ala Met Ala Pro Ser Pro Ala
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Leu Thr Ser Ile Ser Ser Glu Pro Ser Glu Ala Trp Val Gln Ala Phe
                                                45
                            40
Ala Ser Tyr Arg Met Ser Pro Gly Asn Trp Lys Thr Xaa Val Leu Ala
                                            60
Gln Thr Leu Val Glu Ala Leu Gln Leu Asp Pro Glu Thr Leu Ala Asn
                                        75
                    70
Glu Thr Ala Ala Arg Ala Ala Asn Val Ala Arg Ala Ala Ser Asn
Arg Ala Ala Arg Ala Ala Ala Ala Ala Arg Thr Ala Phe Ser Gln
                                105
            100
Val Val Ala Ser His Arg Val Ala Thr Pro Gln Val Ser Gly Glu Asp
                                                125
                           120
Thr Gln Pro Thr Thr Tyr Ala Ala Glu Ala Gln Gly Pro Thr Pro Glu
                                            140
                       135
Pro Pro Leu Ala Ser Pro Gln Thr Ser Gln Met Leu Val Thr Ser Lys
                                      · 155
                    150
Met Ala Ala Pro Glu Ala Pro Ala Thr Ser Ala Gln Ser Gln Thr Gly
                                    170
                165
Ser Pro Ala Gln Glu Ala Ala Thr Glu Gly Pro Ser Ser Ala Cys Ala
                                185
Phe Ser Gln Ala Pro Cys Ala Arg Glu Val Asp Ala Asn Arg Pro Ser
                            200
Thr Ala Phe Leu Gly Gln Asn Asp Val Phe Asp Phe Thr Gln Pro Ala
                                            220
                        215
 Val Ser Val Ala Trp Leu Pro Ala Pro Lys Arg Pro Ala Gln Pro Arg
 <210> 4289
 <211> 353
 <212> DNA
 <213> Homo sapiens
 <400> 4289
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 caaagageet tttgggaaca gttttettat tgaaacatae teagtgttta aacetgeagg
 tgtgggttgg tggcagtcca catggcatcc tttgctctgt ccctgttctc ctgtctctgg
 ctattcaggt tcccgtgagg atactgtcac ccttgaataa tggagcttgc ggaagaccaa
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 353
 <210> 4290
 <211> 113
 <212> PRT
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<213> Homo sapiens <400> 4290 Met Thr Thr Leu Pro Val Arg Asp Met Arg Glu Lys Tyr Gly Ser Leu Leu Thr Ser Gly Val Thr Ala Gln His Ile Ser Arg Leu Cys Phe His 20 Ile Gly Leu Ala Lys Ser Leu Leu Gly Thr Val Phe Leu Leu Lys His 40 Thr Gln Cys Leu Asn Leu Gln Val Trp Val Gly Gly Ser Pro His Gly 55 Ile Leu Cys Ser Val Pro Val Leu Leu Ser Leu Ala Ile Gln Val Pro 75 70 Val Arg Ile Leu Ser Pro Leu Asn Asn Gly Ala Cys Gly Arg Pro Ser 90 85 Pro Cys Phe Trp Ser Pro Cys Ala Glu Ala Ala Val Thr Cys Gly Glu 105 100 Leu <210> 4291 <211> 517 <212> DNA <213> Homo sapiens <400> 4291 nnaaatttgc caagccaaga gttaccccag gaagattctc tcttacatgg ccaattttca caagcagtca ctcccctagc ccatcatcac acagattatt caaagcccac cgatatctca tggagagaca cactttctca gaagtttgga tcctcagatc acttggagaa actatttaag atggatgaag caagtgccca gctccttgct tataaggaaa aaggccattc tcagagttca caatttteet etgateaaga aatageteat etgetgeetg aaaatgtgag tgegeteeca 300 getacggtgg cagttgcttc tecacatace aceteggeta etecaaagee egecaceett ctacccacca atgettcagt gacacettet gggaettece agecacaget ggccaccaca getecacetg taaccactgt caetteteag ceteceaega ceeteattte tacagttttt acacgggctg tggctacact ccaagcaatg gctacaa 517 <210> 4292 <211> 172 <212> PRT <213> Homo sapiens <400> 4292 Xaa Asn Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly Gln Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp

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Tyr Ser Lys Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys
                            40
Phe Gly Ser Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala
                        55
Ser Ala Gln Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser
                                        75
                    70
Gln Phe Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val
                                    90
                85
Ser Ala Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser
                                105
            100
Ala Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr
                          · 120
        115
Pro Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val
Thr Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe
                    150
Thr Arg Ala Val Ala Thr Leu Gln Ala Met Ala Thr
                                    170
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<213> Homo sapiens
<400> 4293
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tacgctttta cagttcactg tgtaaagaga gcacgacggc accgctggaa gtgggcgcag
gtgactttct ggtgtccaga ggagcagctg tgtcacttgt ggctgcagac cctgcgggag
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 tecateacea etgacateat egttaetgaa eatgetaate aggeeaagga gaetetgtat
gagattaaca tagacaaata cgacggcatc gtctgtgtcg gcggagatgg tatgttcagc
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 <210> 4294
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 <212> PRT
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 <400> 4294
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Lys Trp Gln Lys Met Glu Lys Pro Tyr Ala Phe Thr Val His Cys Val
Lys Arg Ala Arg Arg His Arg Trp Lys Trp Ala Gln Val Thr Phe Trp
Cys Pro Glu Glu Gln Leu Cys His Leu Trp Leu Gln Thr Leu Arg Glu
                                        75
Met Leu Glu Lys Leu Thr Ser Arg Pro Lys His Leu Leu Val Phe Ile
                                    90
                85
Asn Pro Phe Gly Gly Lys Gly Gln Gly Lys Arg Ile Tyr Glu Arg Lys
                                                    110
                                105
Val Ala Pro Leu Phe Thr Leu Ala Ser Ile Thr Thr Asp Ile Ile Val
                            120
                                                125
       .115
Thr Glu His Ala Asn Gln Ala Lys Glu Thr Leu Tyr Glu Ile Asn Ile
                        135
Asp Lys Tyr Asp Gly Ile Val Cys Val Gly Gly Asp Gly Met Phe Ser
                                        155
                    150
Glu Val Leu His Gly Leu Ile Gly Arg Thr Gln Arg Ser Ala Gly Val
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                                    170
Asp Gln Asn His Pro Arg
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<210> 4295
<211> 431
<212> DNA
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catgtacatt ttgtgtatgg ctgcttttgt gccacaacag cagggttgag tattgcgaca
gagaccccca ttgcccacaa gcctaaaaca tttgccatcg agccctttaa gaaagagttt
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gcaggeggtg aggtetggag ttegaaacca geetggeeag egtggegaaa eeetgtetee
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<210> 4296
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<212> PRT
<213> Homo sapiens
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Xaa Leu Glu Asn His Cys Leu Leu Leu Pro Cys His Leu Tyr Thr Arg
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                               25
Cys Trp Thr Thr Ala Met Pro Val His Val His Phe Val Tyr Gly Cys
Phe Cys Ala Thr Thr Ala Gly Leu Ser Ile Ala Thr Glu Thr Pro Ile
                       55
Ala His Lys Pro Lys Thr Phe Ala Ile Glu Pro Phe Lys Lys Glu Phe
                   70
                                      75
Ala Gly Arg Ala Arg Trp Pro Trp Leu Pro Pro Val Ile Pro Ala Leu
                                  90
Trp Lys Ala Glu Ala Gly Gly Glu Val Trp Ser Ser Lys Pro Ala Trp
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                               105
Pro Ala Trp Arg Asn Pro Val Ser Pro Ser Gln Ile His Val Ile Ile
                           120
Pro Pro Gln Pro Pro Glu Tyr Leu Gly Leu
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<212> DNA
<213> Homo sapiens
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360
teettteate tggaaagaag acetetteea tetteeatge agetageagt cateagggga
420
gacaccctgc ggggctttga ttctacagat ctttctcaaa ggaagcttag gacccgtggg
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gcagataagg tggaatccac aactgactca cacttcccca gacaggacca gttgccctca
tttccaaaga actgcactct ggaattaaag ggactcttcc attttgaaga aggcatccag
aagctgtatc agtgcaatgg gatcgcctgg aaagcctgga gtccccaaac caaggatgtg
gaagacaaat cctgtccagc cgggtggcac cagcactcag gctactgtca catcttgatc
900
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acagagcaga aaggcacctg gaatgcggct gcccaagctt gcagggaaca atacctgggc
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Gly Leu Glu Glu Asp Asp Glu Val Phe Glu Val Ile Leu Asn Ser Pro
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Lys His Ser Thr Trp Glu Lys Gly Ile Trp His Leu Leu Pro Pro Gly
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55

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_				645	Ala				650					655	
_			660		Ser			665					670		
		675			Arg		680					685			
	690				Gly Ser	695					700				
705					710 Val					715					720
		_		725	Gln				730					735	
			740		Gly			745					750		
		755			Thr		760					765			
	770				Glu	775					780				
785					790 Leu					795					800
				805	Glu	20			810					815	
			820					825					830		Tyr
		835			Val		840					845			
_	850					855					860				
865		_			Leu 870					875					880
				885	Phe				890					895	
	_		900		Ile			905					910		
		915			Ala		920					925			
Tyr	Arg	Pro	Ala	Arg	Gly	val	⊥eu	GIN	Pro	ASP	TIIL	חבת	oer.	тте	wig

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930
Ser His Ala Ser Leu Pro Asn Ile Trp Thr Ala Trp Gln Ala Ile Thr
                                        955
                    950
Pro Leu Val Glu Glu Leu Asn Val Leu Leu Gln Glu Trp Pro Gly Leu
                                    970
His Tyr Thr Val His Ile Leu Cys Ser Lys Cys Leu Lys Arg Gly Ser
                                985
            980
Pro Asn Pro His Ala Phe Pro Gly Glu Leu Leu Ser Gln Pro Arg Pro
                            1000
Glu Gly Val Ala Glu Ile Ile Cys Pro Lys Asn Gly Ser Glu Arg Val
    1010
                        1015
Asn Val Ala Leu Val Tyr Pro Pro Thr Pro Thr Val Ile Ser Pro Cys
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                                        1035
                    1030
Ser Lys Lys Asn Val Gly Glu Lys His Arg Asn Gln
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<212> DNA
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tgtggttgtg gagttcaggg tgtgcaggga acagcaagat gtgcctcttg ttcttgctgc
cacgetteee tgtgteetge gggegggtgt ggatgggget geteetteet cacagganee
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 ctgggaacct tcttaggcag ccatttccat ggtgggggt ccattcccgg gaggggtacc
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<210> 4308

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<211> 200
<212> PRT
<213> Homo sapiens
<400> 4308
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Cys Arg Gly Thr Thr Ser Thr Ser Gly Thr Cys Gly Arg Cys Gly Pro
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Ala Pro Gly Ala Arg Cys His Gly Asp Ala Pro Gly Ser Leu Ala Ala
                            40
Arg Cys Gly Cys Gly Val Gln Gly Val Gln Gly Thr Ala Arg Cys Ala
                                            60
                        55
Ser Cys Ser Cys Cys His Ala Ser Leu Cys Pro Ala Gly Gly Cys Gly
                                        75
                    70
Trp Gly Cys Ser Phe Leu Thr Gly Xaa Cys Gly Gly Ser Gly Ala Xaa
                                    90
Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp Met Ile
                                105
            100
Lys Val Gly Arg Ala Thr Leu Cys Ile Val Pro Pro Thr Cys Ser Cys
                            120
        115
Ile Ala Gly Leu Ser Gln Gly Pro Ser Leu Gly Ser Thr Gly Ser Ser
                                            140
                        135
Val Gly Gly Ser Glu Val Arg Cys Cys His Phe Val Trp Phe Asn Met
                                        155
                    150
Ser Ile Ala Trp Tyr Gln Pro Cys Ser Trp Leu Arg Ala Val Thr Leu
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Cys Gln Asn Leu His Trp Ala Cys Thr Ser Cys His Cys Asn Cys Pro
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Cys Gln Cys Pro Gln Leu Leu Phe
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<212> DNA
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<400> 4309
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gtcgcctttg acactggaga actgaacaga ttgggagggt gatgtgttaa gaccacataa
tocatttgaa atotcaacot tttcagggtc actatcacot tcaatgacat tcacagaagt
ttcccgatct gttaaactgt ctgaaatact tggatgattt tcatccaaag ttgaagtttc
aagatttgtt tcatcattca cctgttgaat tataacccct tctgaatgct ttgatttata
aataggcatg aaaaattcag ttggtgaagg gaatatctcg ttctcatcct ttggtgccga
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caataacata tocaaagoot tttggtattg ttgacgttcc tgctgaattg ttacttcact
480
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720
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1140
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 1380
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 ggaattattt ttataattgg ctcgcattgc agttttagtt aatttgaact ctttttcaca
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 1928
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<210> 4310

<211> 599 <212> PRT <213> Homo sapiens <400> 4310 Met Asn Gly Ser Arg Arg Val Arg Ala Thr Ser Val Leu Pro Arg Tyr Gly Pro Pro Cys Leu Phe Lys Gly His Leu Ser Thr Lys Ser Asn Ala 25 20 Phe Cys Thr Asp Ser Ser Ser Leu Arg Leu Ser Thr Leu Gln Leu Val Lys Asn His Met Ala Val His Tyr Asn Lys Ile Leu Ser Ala Lys Ala 55 Ala Val Asp Cys Ser Val Pro Val Ser Val Ser Thr Ser Ile Lys Tyr 75 70 Ala Asp Gln Gln Arg Arg Glu Lys Leu Lys Lys Glu Leu Ala Gln Cys 90 85 Glu Lys Glu Phe Lys Leu Thr Lys Thr Ala Met Arg Ala Asn Tyr Lys 105 100 Asn Asn Ser Lys Ser Leu Phe Asn Thr Leu Gln Lys Pro Ser Gly Glu 120 Pro Gln Ile Glu Asp Asp Met Leu Lys Glu Glu Met Asn Gly Phe Ser 140 135 Ser Phe Ala Arg Ser Leu Val Pro Ser Ser Glu Arg Leu His Leu Ser 155 150 Leu His Lys Ser Ser Lys Val Ile Thr Asn Gly Pro Glu Lys Asn Ser 170 165 Ser Ser Ser Pro Ser Ser Val Asp Tyr Ala Ala Ser Gly Pro Arg Lys 185 190 Leu Ser Ser Gly Ala Leu Tyr Gly Arg Arg Pro Arg Ser Thr Phe Pro 200 Asn Ser His Arg Phe Gln Leu Val Ile Ser Lys Ala Pro Ser Gly Asp 220 215 Leu Leu Asp Lys His Ser Glu Leu Phe Ser Asn Lys Gln Leu Pro Phe 230 235 Thr Pro Arg Thr Leu Lys Thr Glu Ala Lys Ser Phe Leu Ser Gln Tyr 250 245 Arg Tyr Tyr Thr Pro Ala Lys Arg Lys Lys Asp Phe Thr Asp Gln Arg 265 Ile Glu Ala Glu Thr Gln Thr Glu Leu Ser Phe Lys Ser Glu Leu Gly 280 Thr Ala Glu Thr Lys Asn Met Thr Asp Ser Glu Met Asn Ile Lys Gln 300 295 . Ala Ser Asn Cys Val Thr Tyr Asp Ala Lys Glu Lys Ile Ala Pro Leu 315 310 Pro Leu Glu Gly His Asp Ser Thr Trp Asp Glu Ile Lys Asp Asp Ala 330 Leu Gln His Ser Ser Pro Arg Ala Met Cys Gln Tyr Ser Leu Lys Pro 340 345 Pro Ser Thr Arg Lys Ile Tyr Ser Asp Glu Glu Glu Leu Leu Tyr Leu 360 Ser Phe Ile Glu Asp Val Thr Asp Glu Ile Leu Lys Leu Gly Leu Phe 380 375 Ser Asn Arg Phe Leu Glu Arg Leu Phe Glu Arg His Ile Lys Gln Asn

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395
                    390
Lys His Leu Glu Glu Glu Lys Met Arg His Leu Leu His Val Leu Lys
                                    410
                405
Val Asp Leu Gly Cys Thr Ser Glu Glu Asn Ser Val Lys Gln Asn Asp
                                                     430
                                425
            420
Val Asp Met Leu Asn Val Phe Asp Phe Glu Lys Ala Gly Asn Ser Glu
                            440
        435
Pro Asn Glu Leu Lys Asn Glu Ser Glu Val Thr Ile Gln Gln Glu Arg
                        455
Gln Gln Tyr Gln Lys Ala Leu Asp Met Leu Leu Ser Ala Pro Lys Asp
                    470
                                        475
Glu Asn Glu Ile Phe Pro Ser Pro Thr Glu Phe Phe Met Pro Ile Tyr
                485
                                    490
Lys Ser Lys His Ser Glu Gly Val Ile Ile Gln Gln Val Asn Asp Glu
                                505
            500
Thr Asn Leu Glu Thr Ser Thr Leu Asp Glu Asn His Pro Ser Ile Ser
                                                 525
                            520
Asp Ser Leu Thr Asp Arg Glu Thr Ser Val Asn Val Ile Glu Gly Asp
                                            540
                        535
Ser Asp Pro Glu Lys Val Glu Ile Ser Asn Gly Leu Cys Gly Leu Asn
                                        555
                    550
Thr Ser Pro Ser Gln Ser Val Gln Phe Ser Ser Val Lys Gly Asp Asn
                                    570
                565
Asn His Asp Met Glu Leu Ser Thr Leu Lys Ile Met Glu Met Ser Ile
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Glu Asp Cys Pro Leu Asp Val
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<210> 4311
<211> 432
<212> DNA
<213> Homo sapiens
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gagactggag gggaaggcga caggcggatt gcgctctctc gagccaactc atcctctttc
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<212> PRT
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<213> Homo sapiens <400> 4312 Xaa Arg Val Lys Gly Ile Arg Pro Trp Asn Cys Gln Arg Cys Phe Ala His Tyr Asp Val Gln Ser Ile Leu Phe Asn Ile Asn Glu Ala Met Ala Thr Arg Ala Asn Val Gly Lys Arg Lys Asn Ile Thr Thr Gly Ala Ser 40 Ala Ala Ser Gln Thr Gln Met Pro Thr Gly Gln Thr Gly Asn Cys Glu 60 55 Ser Pro Leu Gly Ser Lys Glu Asp Leu Asn Ser Lys Glu Asn Leu Asp 75 Ala Asp Glu Gly Asp Gly Lys Ser Asn Asp Leu Val Leu Ser Cys Pro Tyr Phe Arg Asn Glu Thr Gly Gly Glu Gly Asp Arg Arg Ile Ala Leu 100 105 Ser Arg Ala Asn Ser Ser Ser Phe Ser Ser Gly Glu Ser Cys Ser Phe Glu Ser Ser Leu Ser Ser His Cys Thr Asn Ala Gly Val Ser Val Leu 130 <210> 4313 <211> 936 <212> DNA <213> Homo sapiens <400> 4313 ggatecetee ttttteetee cetgeeetge ceaggeeeag atggeettga etgtaaagee aggtgctgcc tgacaggttc ttctctccct gtctctggtc attgatccat ctctttgtcc attragtate caaccatect etecattete etetggacet caccactete agagetgett gtcctggcag aatctacagt tcaccccaac tctatgcctt acccctccca acccaacagc atttgcagtt tgcaaaatat acagacccaa gtcctgaggg gactgaggac atgatgctgg gcccaagtot cotgotcagg gottototoc aatgccagoo otgccactoo ttootcacco teettggage eteetetget gettgtetat eccaaeggee etgeteeeet ecetteetge ccttcaccag ctttctggga caccatgccc tgaggaaggg acctttggtt ttctctaaac atctttgaag ggctgaggca gtcagggctg gctgccttgt cactctttat ttggaagcca ctcaaaccat tcccaagaag agggacctca gctggcaatc tggaaacctg gcccaggtct gggcagatgt cttcacttct cctaccttcc cagtcttgtg atcctgtgat gagcaccagg 660 atggccctgt ggtccctaga gcacccctca tgctgtaggg tcctgcagcc ccatcctttc

totactgggc cotggtated tggetectet etcagetetg ccaetgatet etgtgeetta

780

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gtttacttct ctgcacgggg gactcacccc aagaccattt ccagcagctt cccaggtgat
gtggtgcccc aaggctgggc tttgcagctg tggcccagct ccttagtgct gcccaggaga
caccaggetg ctcagaatga ggtgactgcg ggcaac
936
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<213> Homo sapiens
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Met Ser Ser Leu Leu Leu Pro Ser Gln Ser Cys Asp Pro Val Met Ser
                                    10
Thr Arg Met Ala Leu Trp Ser Leu Glu His Pro Ser Cys Cys Arg Val
                                25
Leu Gln Pro His Pro Phe Ser Thr Gly Pro Trp Tyr Pro Gly Ser Ser
                            40
        35
Leu Ser Ser Ala Thr Asp Leu Cys Ala Leu Val Tyr Phe Ser Ala Arg
                                            60
                        55
Gly Thr His Pro Lys Thr Ile Ser Ser Ser Phe Pro Gly Asp Val Val
                                        75
65
                    70
Pro Gln Gly Trp Ala Leu Gln Leu Trp Pro Ser Ser Leu Val Leu Pro
                                    90
Arg Arg His Gln Ala Ala Gln Asn Glu Val Thr Ala Gly Asn
                                105
<210> 4315
<211> 573
<212> DNA
<213> Homo sapiens
<400> 4315
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cagagogatg accatgtgaa gacacaggga agagatggcc acctaccacc acgccatggt
cacctaccat ccaagccatg gtcaccttca ccaagccaca gtcatctacc atccaagcca
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acagateett ecceagagee etcagtagga gecaaceetg etgacacett gateteagae
ttcaagcctc cagaactgtg ggacaatcct tcactgtcat ttaatccacc cagcatgtgg
totottgtca cagttgcatt agccagtgaa cotacccggg coottotgca gtcgcctggc
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573
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<210> 4316
<211> 169
<212> PRT
<213> Homo sapiens
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Xaa Leu Ile Gln Tyr Asp Trp Cys Pro Tyr Lys Lys Arg Lys Leu Gly
His Arg Gln Ala Gln Ser Asp Asp His Val Lys Thr Gln Gly Arg Asp
Gly His Leu Pro Pro Arg His Gly His Leu Pro Ser Lys Pro Trp Ser
                            40
Pro Ser Pro Ser His Ser His Leu Pro Ser Lys Pro Pro Ser Pro Thr
                        55
Ile Gln Ala Met Ala Thr Tyr Leu Pro Ser His Gly His Leu Pro Ala
                                        75
                    70
Lys Pro Trp Ser Pro Thr His Gln Val Met Val Ala Tyr His Pro Arg
                85
                                    90
Ser Arg Pro Gly Thr Asp Pro Ser Pro Glu Pro Ser Val Gly Ala Asn
                                105
            100
Pro Ala Asp Thr Leu Ile Ser Asp Phe Lys Pro Pro Glu Leu Trp Asp
                            120
        115
Asn Pro Ser Leu Ser Phe Asn Pro Pro Ser Met Trp Ser Leu Val Thr
                        135
Val Ala Leu Ala Ser Glu Pro Thr Arg Ala Leu Leu Gln Ser Pro Gly
                                        155
                                                             160
145
Ser Gly Val Val Leu Val Arg Lys Phe
                165
<210> 4317
<211> 744
<212> DNA
<213> Homo sapiens
<400> 4317
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toccatgoog aaaacatact coagatattt aatgaattto gtgatagoog ottattoaca
gatgttatca tttgggtgga aggaaaagaa tttccttgcc atagagctgt gctctcagcc
tgtagcagct acttcagagc tatgttttgt aatgaccaca gggaaagccg agaaatgttg
gttgagatca atggtatttt agctgaagct atggaatgtt ttttgcagta tgtttatact
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cagattagtg ttctccgtga tgcatgtgcc aagttcttgg aggagcaact tgatccttgt
420
aattgcttag gaatccageg ctttgctgat acccattcac tcaaaacact cttcacaaaa
tgcaaaaatt ttgcgttaca gacttttgag gatgtatccc agcacgaaga atttcttgag
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540

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ctgttacacg agetectgae acatgtgaga etceetetgt tgcateceaa etaetttgtt
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744
<210> 4318
<211> 239
<212> PRT
<213> Homo sapiens
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Ile Leu Gln Ile Phe Asn Glu Phe Arg Asp Ser Arg Leu Phe Thr Asp
                                25
Val Ile Ile Trp Val Glu Gly Lys Glu Phe Pro Cys His Arg Ala Val
                            40
Leu Ser Ala Cys Ser Ser Tyr Phe Arg Ala Met Phe Cys Asn Asp His
                        55
Arg Glu Ser Arg Glu Met Leu Val Glu Ile Asn Gly Ile Leu Ala Glu
                    70
                                        75
Ala Met Glu Cys Phe Leu Gln Tyr Val Tyr Thr Gly Lys Val Lys Ile
                85
                                    90
Thr Thr Glu Asn Val Gln Tyr Leu Phe Glu Thr Ser Ser Leu Phe Gln
                                105
Ile Ser Val Leu Arg Asp Ala Cys Ala Lys Phe Leu Glu Glu Gln Leu
                            120
Asp Pro Cys Asn Cys Leu Gly Ile Gln Arg Phe Ala Asp Thr His Ser
                                            140
                        135
Leu Lys Thr Leu Phe Thr Lys Cys Lys Asn Phe Ala Leu Gln Thr Phe
                    150
                                        155
Glu Asp Val Ser Gln His Glu Glu Phe Leu Glu Leu Asp Lys Asp Glu
                                    170
                165
Leu Ile Asp Tyr Ile Cys Ser Asp Glu Leu Val Ile Gly Lys Glu Glu
                                185
            180
Met Val Phe Glu Ala Val Met Arg Trp Val Tyr Arg Ala Val Asp Leu
                            200
Arg Arg Pro Leu Leu His Glu Leu Leu Thr His Val Arg Leu Pro Leu
                                            220
                        215
Leu His Pro Asn Tyr Phe Val Gln Thr Val Glu Val Asp Gln Leu
                    230
                                        235
<210> 4319
<211> 388
<212> DNA
<213> Homo sapiens
<400> 4319
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aggccaggtc gaccgcggtc ggagagag
<210> 4320
<211> 129
<212> PRT
<213> Homo sapiens
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                 5
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Lys Pro Asp Ser Leu Leu Val Pro Ala Val Ala Ser Asp Ser Cys Asn
        35
                            40
Asn Ser Ile Ser Leu Leu Ser Glu Lys Leu Thr Ser Ser Cys Ser Pro
                        55
His His Ile Lys Arg Ser Val Val Glu Ala Met Gln Arg Gln Ala Arg
                    70
                                        75
Lys Met Cys Asn Tyr Asp Lys Ile Leu Ala Thr Lys Lys Asn Leu Asp
                85
                                    90
His Val Asn Lys Ile Leu Lys Ala Lys Lys Leu Gln Arg Gln Ala Arg
                                105
Thr Gly Asn Asn Phe Val Lys Arg Arg Pro Gly Arg Pro Arg Ser Glu
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Arg
<210> 4321
<211> 278
<212> DNA
<213> Homo sapiens
<400> 4321
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cgtcccggtg gaaggcagcc ctgggcggaa cccaggcgtt taacggctca ctaggcagcc
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278
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<210> 4322
<211> 85
<212> PRT
<213> Homo sapiens
<400> 4322
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His Val Leu Ile Cys Ser Pro Asp Leu Gly Leu Pro Ser Glu Pro Leu
Asn Ala Trp Val Pro Pro Arg Ala Ala Phe His Arg Asp Ala Gly Pro
        35
Ala Val Ala Gly Pro Cys Arg Cys Gly Gly Leu Leu Thr Lys Glu Pro
Gly Leu Ala Ala Trp Asn Asn Leu Gln Val Gly Val Leu Arg Gly Leu
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                                                             80
                    70
65
Trp Gln Val Leu Gly
                85
<210> 4323
<211> 1542
<212> DNA
<213> Homo sapiens
<400> 4323
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gacgagaaga ttgaggtgga tgacccccct gacaaggagg acatgcgatc aagcttcagg
togaatgtgt tgacggggtc ggctccccag caggactacg ataagctgaa ggcactcgga
ggggaaaact ccagcaaaac tggactctct acgtcaggca atgtggagaa aaacaaagct
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agaaaagcag aggataaatt gaaggaaagc tctgacaagg tgctggaaaa cagagtccta
gatgggaagc tgagctccga gaagaatgac accagcctcc ccagcgttgc gccatcaaag
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aaggeggett cagaeteetg caaagaacca gtggecaatt egagggaate eteecegtta
ccaaaagaag taaatgacag tccgagagcc gctgacaagt ctcctgaatc ccagaatctc
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gagaacagca gcaaaggatc cccgtcctct cccgcggggt ccacaccagc aatccccaaa
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Pro Pro Asp Lys Glu Asp Met Arg Ser Ser Phe Arg Ser Asn Val Leu
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Thr Gly Ser Ala Pro Gln Gln Asp Tyr Asp Lys Leu Lys Ala Leu Gly
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Gly Glu Asn Ser Ser Lys Thr Gly Leu Ser Thr Ser Gly Asn Val Glu
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Lys Asn Lys Ala Val Lys Arg Glu Thr Glu Ala Ser Ser Ile Asn Leu
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Ser Val Tyr Glu Pro Phe Lys Val Arg Lys Ala Glu Asp Lys Leu Lys
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Thr Lys Ser Ser Ser Lys Leu Ser Ser Cys Ile Ala Ala Ile Ala Ala
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Leu Ser Ala Lys Lys Ala Ala Ser Asp Ser Cys Lys Glu Pro Val Ala
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Asn Ser Arg Glu Ser Ser Pro Leu Pro Lys Glu Val Asn Asp Ser Pro
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Lys Lys Pro Ser Leu Lys Gln Pro Asp Ser Pro Arg Ser Ile Ser Ser
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Glu Asn Ser Ser Lys Gly Ser Pro Ser Ser Pro Ala Gly Ser Thr Pro
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Ala Ile Pro Lys Val Arg Ile Lys Thr Ile Lys Thr Ser Ser Gly Glu
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Ile Lys Arg Thr Val Thr Arg Val Leu Pro Glu Val Asp Leu Asp Ser
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Gly Lys Lys Pro Ser Glu Gln Thr Ala Ser Val Met Ala Ser Val Thr
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Ser Leu Leu Ser Ser Pro Ala Ser Ala Ala Val Leu Ser Ser Pro Pro
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Arg Ala Pro Leu Gln Ser Ala Val Val Thr Asn Ala Val Ser Pro Ala
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Glu Leu Thr Pro Lys Gln Val Thr Ile Lys Pro Val Ala Thr Ala Phe
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Leu Pro Val Ser Ala Val Lys Thr Ala Gly Ser Gln Val Ile Asn Leu
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Lys Leu Ala Asn Asn Thr Thr Val Lys Ala Thr Val Ile Ser Ala Ala
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Ser Val Gln Ser Ala Ser Ser Ala Ile Ile Lys Ala Ala Asn Ala Ile
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Gln Gln Gln Thr Val Val Val Pro Ala Ser Ser Leu Ala Asn Ala Lys
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Leu Val Pro Lys Thr Val His Leu Ala Asn Leu Asn Leu Leu Pro Gln
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Gly Ala Gln Ala Thr Ser Glu Leu Arg Gln Val Leu Thr Lys Pro Gln
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Gln Gln Ile Lys Gln Ala Ile Ile Asn Ala Ala Ser Gln Pro Pro
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<212> DNA

<213> Homo sapiens

<400> 4325

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Ala Ala Cys Gly Gln Ser Leu Glu Glu Arg Ser Lys Thr Leu Ala Glu
Val Lys Pro Ile Leu Gln Ala Thr Gly Phe Pro Trp His Val Val Ala
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Leu Glu Glu Val Phe Ser Leu Pro Pro Ser Val Leu Trp Cys Ser Ala
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Gln Glu Leu Val Gly Ser Glu Gly Ala Tyr Lys Ala Ala Val Asp Ser
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Phe Leu Gln Gln Gln Tyr Val Leu Gly Ala Gly Gly Pro Gly Pro
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Thr Gln Gly Glu Glu Gln Pro Pro Gln Pro Pro Leu Asp Pro Gln Asn
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Leu Ala Arg Pro Pro Ala Pro Ala Gln Thr Glu Ala Leu Ser Gln Leu
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Phe Cys Ser Val Arg Thr Leu Thr Ala Lys Glu Glu Leu Leu Gln Thr
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Leu Arg Thr His Leu Ile Leu His Met Ala Arg Ala His Gly Tyr Ser
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Lys Val Met Thr Gly Asp Ser Cys Thr Arg Leu Ala Ile Lys Leu Met
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Thr Asn Leu Ala Leu Gly Arg Gly Ala Phe Leu Ala Trp Asp Thr Gly
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Phe Ser Asp Glu Arg His Gly Asp Val Val Val Arg Pro Met Arg
                                        235
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Asp His Thr Leu Lys Glu Val Ala Phe Tyr Asn Arg Leu Phe Ser Val
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Pro Ser Val Phe Thr Pro Ala Val Asp Thr Lys Ala Pro Glu Lys Ala
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Ser Ile His Arg Leu Met Glu Ala Phe Ile Leu Arg Leu Gln Thr Gln
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Phe Pro Ser Thr Val Ser Thr Val Tyr Arg Cys Val Trp Val Cys Ala
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Ala Thr Ser Ser Pro Trp Leu Cys Gly Leu Ser Val Ser His Pro Gln
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His Leu Asp Gly Leu Arg Val Arg Ala Lys Val Arg Arg Pro Gly His
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His Thr Ile Pro Ala Thr Thr Arg Trp Leu Phe Leu Glu Ser Glu Gly
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gaageegeca getggaggaa gggaggaeee ttagaageea eecegeeete aggaggaaca
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Thr Ala Gly Lys Lys Leu Pro Glu Val Pro Pro Ser Glu Glu Glu Glu
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Gln Glu Ala Trp Val Asn Ala Leu Leu Gly Arg Ile Phe Trp Asp Phe
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Leu Gly Glu Lys Tyr Trp Ser Asp Leu Val Ser Lys Lys Ile Gln Met
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Lys Leu Ser Lys Ile Lys Leu Pro Tyr Phe Met Asn Glu Leu Thr Leu
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Thr Glu Leu Asp Met Gly Val Ala Val Pro Lys Ile Leu Gln Ala Phe
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Lys Pro Tyr Val Asp His Gln Gly Leu Trp Ile Asp Leu Glu Met Ser
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                        135
Tyr Asn Gly Ser Phe Leu Met Thr Leu Glu Thr Lys Met Asn Leu Pro
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Lys Leu Gly Lys Glu Pro Leu Val Glu Ala Leu Lys Val Gly Glu Ile
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              - 165
Gly Lys Glu Gly Cys Arg Pro Arg Ala Phe Cys Leu Ala Asp Ser Asp
                                                    190
                              185
            180
Glu Glu Ser Ser Ser Ala Gly Ser Ser Glu Glu Asp Asp Ala Pro Glu
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                           200
Pro Ala Gly Glu Thr Asn Ser Ser Ser Gln Gly Glu Gly Tyr Val Gly
                        215
Gly His Arg Thr Ser Lys Ile Met Arg Phe Val Asp Lys Ile Thr Lys
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                   230
Ser Lys Tyr Phe Gln Lys Ala Thr Glu Thr Glu Phe Ile Lys Arg Xaa
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Ile Glu Glu Val Ser Asn Thr Pro Leu Leu Leu Thr Val Glu Val Gln
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Glu Cys Arg Gly Thr Leu Ala Val Asn Ile Pro Pro Pro Pro Thr Asp
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                                                285
Arg Val Trp Tyr Gly Phe Arg Lys Pro Pro His Val Glu Leu Lys Ala
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Arg Pro Lys Leu Gly Glu Arg Glu Val Thr Leu Val His Val Thr Asp
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Trp Ile Glu Lys Lys Leu Glu Glu Glu Phe Gln Lys Val Phe Val Met
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                325
Pro Asn Met Asp Asp Val Tyr Ile Thr Ile Met His Ser Ala Met Asp
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Pro Arg Ser Thr Ser Cys Leu Leu Lys Asp Pro Pro Val Glu Ala Ala
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Asp Arg Pro
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Arg Pro Pro Ser Pro Ile Lys Phe Asp Leu Asn Glu Pro Leu His Leu
Ser Phe Leu Gln Asn Ala Ala Lys Leu Tyr Ala Thr Val Tyr Cys Ile
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Pro Phe Ala Glu Glu Asp Leu Ser Ala Asp Ala Leu Leu Asn Ile Leu
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Ser Glu Val Lys Ile Gln Glu Phe Lys Pro Ser Asn Lys Val Val Gln
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Thr Asp Glu Thr Ala Arg Lys Pro Asp His Val Pro Ile Ser Ser Glu
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Asp Glu Arg Asn Ala Ile Phe Gln Leu Glu Lys Ala Ile Leu Ser Asn
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Glu Ala Thr Lys Ser Asp Leu Gln Met Ala Val Leu Ser Phe Glu Lys
                                            140
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Asp Asp Asp His Asn Gly His Ile Asp Phe Ile Thr Ala Ala Ser Asn
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Leu Arg Ala Lys Met Tyr Ser Ile Glu Pro Ala Asp Arg Phe Lys Thr
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Lys Arg Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Ala
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Thr Val Ser Gly Leu Val Ala Leu Glu Met Ile Lys Val Thr Gly Gly
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Tyr Pro Phe Glu Ala Tyr Lys Asn Cys Phe Leu Asn Leu Ala Ile Pro
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Ile Val Val Phe Thr Glu Thr Thr Glu Val Arg Lys Thr Lys Ile Arg
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Asn Gly Ile Ser Phe Thr Ile Trp Asp Arg Trp Thr Val His Gly Lys
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Glu Asp Phe Thr Leu Leu Asp Phe Ile Asn Ala Val Lys Glu Lys Tyr
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Gly Ile Glu Pro Thr Met Val Val Gln Gly Val Lys Met Leu Tyr Val
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                            280
 Pro Val Met Pro Gly His Ala Lys Arg Leu Lys Leu Thr Met His Lys
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Val Phe Ser Pro Pro Gly Pro Pro Arg Lys Pro Pro Ala Leu Ser Arg
Val Ser Arg Met Phe Ser Val Ala His Pro Ala Ala Lys Val Pro Gln
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Pro Glu Arg Leu Asp Leu Val Tyr Thr Ala Leu Lys Arg Gly Leu Thr
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Ala Tyr Leu Glu Val His Gln Gln Glu Gln Glu Lys Leu Gln Gly Gln
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Ile Arg Glu Ser Lys Arg Asn Ser Arg Leu Gly Phe Leu Tyr Asp Leu
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Asp Lys Gln Val Lys Ser Ile Glu Arg Phe Leu Arg Arg Leu Glu Phe
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His Ala Ser Lys Ile Asp Glu Leu Tyr Glu Ala Tyr Cys Val Gln Arg
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                        135
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Asn Trp Arg Pro Gln Val Leu Val Met Leu Asn Leu Asp Ala Glu Gln
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Tyr Gly Ser Leu Arg Ser Phe Phe Phe His Pro Leu Phe Leu Glu Lys
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Thr Leu Thr His Met Ser Ile Thr Arg Leu His Glu Gln Lys Leu Val
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Gln His Val Val Ser Gln Asn Cys Asp Gly Leu His Leu Arg Ser Gly
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Leu Xaa Arg Thr Ala Ile Ser Glu Leu His Gly Asn Met Tyr Ile Glu
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Gly Val Arg Ala Gly Val Arg Cys Asp Gly Ala His Cys Pro Pro Gln
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His His Cys Ala
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1080
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                            40
Gly Pro Arg Leu Trp His Gly Thr Cys Pro Ser Ala Gln His Gly Pro
                        55
Gly Ala Thr Leu Leu Ala Glu Gly Gln Gly Pro Leu Cys Arg Gln Trp
Gly Gly Gly Pro Arg Phe Pro Asp Arg Gly Arg Gln Gly Thr Gly Glu
Pro Ala Ser Pro Ser Gly Gln His Gly Pro Gly Gln Thr Glu Gln Gly
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4500		•		cacatctatc	
4560		á.		acttagactg	
gagtetteca 4620	atccagtttt	accagccaac	tactttgttt	tgatttcaat	aaattttgca

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Gln Ser Ser Trp Gly Tyr Arg His Ser Pro Pro Arg Leu Ala Asn Phe
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Pro Ala Glu Val Asp Glu Glu Gly Lys Asp Ile Asn Pro His Ile Pro
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Gln Tyr Ile Ser Ser Val Pro Trp Tyr Ile Asp Pro Ser Lys Arg Pro
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Thr Leu Lys His Gln Arg Pro Gln Pro Glu Lys Gln Lys Gln Phe Ser
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Ser Ser Gly Glu Trp Tyr Lys Arg Gly Val Lys Glu Asn Ser Ile Ile
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Thr Lys Tyr Arg Lys Gly Ala Cys Glu Asn Cys Gly Ala Met Thr His
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Lys Lys Lys Asp Cys Phe Glu Arg Pro Arg Arg Val Gly Ala Lys Phe
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Thr Gly Thr Asn Ile Ala Pro Asp Glu His Val Gln Pro Gln Leu Met
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Phe Asp Tyr Asp Gly Lys Arg Asp Arg Trp Asn Gly Tyr Asn Pro Glu
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Glu His Met Lys Ile Val Glu Glu Tyr Ala Lys Val Asp Leu Ala Lys
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Arg Thr Leu Lys Ala Gln Lys Leu Gln Glu Glu Leu Ala Ser Gly Lys
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Leu Val Glu Gln Ala Asn Ser Pro Lys His Gln Trp Gly Glu Glu
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Pro Asn Ser Gln Thr Glu Lys Asp His Asn Ser Glu Asp Glu Asp Glu
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Asp Lys Tyr Ala Asp Asp Ile Asp Met Pro Gly Gln Asn Phe Asp Ser
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Lys Glu Ser Ile Leu Glu Lys Tyr Gly Gly Gln Glu His Leu Asp Ala
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Pro Pro Ala Glu Leu Leu Ala Gln Thr Glu Asp Tyr Val Glu Tyr
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Ser Arg His Gly Thr Val Ile Lys Gly Gln Glu Arg Ala Val Ala Cys
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Ser Lys Tyr Glu Glu Asp Val Lys Ile His Asn His Thr His Ile Trp
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Gly Ser Tyr Trp Lys Glu Gly Arg Trp Gly Tyr Lys Cys Cys His Ser
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Phe Phe Lys Tyr Ser Tyr Cys Thr Gly Glu Ala Gly Lys Glu Ile Val
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Lys Lys Pro Gln Thr Leu Met Glu Leu His Gln Glu Lys Leu Lys Glu
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Glu Lys Lys Lys Lys Lys Lys Lys Lys His Arg Lys Ser Ser
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Ser Asp Ser Asp Asp Glu Glu Lys Lys His Glu Lys Leu Lys Lys Ala
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Leu Asn Ala Glu Glu Ala Arg Leu Leu His Val Lys Glu Thr Met Gln
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Ile Asp Glu Arg Lys Arg Pro Tyr Asn Ser Met Tyr Glu Thr Arg Glu
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 1741
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Gly Leu Ala Ala Lys Gln Ser Arg Ile Arg Asn Ile Ser Asn Thr Val
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Met Lys Val Lys Gln Ile Leu Gly Arg Ser Ser Ser Asp Pro Gln Ala
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Gln Lys Tyr Ile Ala Glu Ser Lys Cys Leu Val Ile Glu Lys Asn Gly
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Lys Leu Arg Tyr Glu Ile Asp Thr Gly Glu Glu Thr Lys Phe Val Asn
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Pro Glu Asp Val Ala Arg Leu Ile Phe Ser Lys Met Lys Glu Thr Ala
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His Ser Val Leu Gly Ser Asp Ala Asn Asp Val Val Ile Thr Val Pro
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Phe Asp Phe Gly Glu Lys Gln Lys Asn Ala Leu Gly Glu Ala Ala Arg
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Ala Ala Gly Phe Asn Val Leu Arg Leu Ile His Glu Pro Ser Ala Ala
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Asn Ile Gly Gly Ala His Phe Thr Glu Thr Leu Ala Gln Tyr Leu Ala
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                                       235
Ser Glu Phe Gln Arg Ser Phe Lys His Asp Val Arg Gly Asn Ala Arg
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Ser Thr Leu Gly Ser Ala Asn Cys Phe Leu Asp Ser Leu Tyr Glu Gly
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Gln Asp Phe Asp Cys Asn Val Ser Arg Ala Arg Phe Glu Leu Leu Cys
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Ser Pro Leu Phe Asn Lys Cys Ile Glu Ala Ile Arg Gly Leu Leu Asp
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Gln Asn Gly Phe Thr Ala Asp Asp Ile Asn Lys Val Val Leu Cys Gly
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Gly Ser Ser Arg Ile Pro Lys Leu Gln Gln Leu Ile Lys Asp Leu Phe
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Ile Gly Ala Ala Ile Glu Ala Gly Ile Leu Ile Gly Lys Glu Asn Leu
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Leu Val Glu Asp Ser Leu Met Ile Glu Cys Ser Ala Arg Asp Ile Leu
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Val Lys Gly Val Asp Glu Ser Gly Ala Ser Arg Phe Thr Val Leu Phe
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Pro Ser Gly Thr Pro Leu Pro Ala Arg Arg Gln His Thr Leu Gln Ala
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Pro Gly Ser Ile Ser Ser Val Cys Leu Glu Leu Tyr Glu Ser Asp Gly
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Asp Leu Asp Lys Lys Glu Asn Gly Leu Arg Asp Ile Leu Ala Val Leu
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 Gly Leu Pro Pro Arg Phe Ser Ser Pro Thr Pro Leu Trp Arg Lys Val
                         55
 Leu Ser Thr Ala Val Val Gly Ala Pro Leu Leu Leu Gly Ala Arg Tyr
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 Val Met Ala Glu Ala Arg Glu Lys Arg Arg Met Arg Leu Val Val Asp
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 Gly Met Gly Arg Phe Cys Arg Ser Leu Lys Val Gly Leu Gln Ile Ser
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	gggacgccac	ctccgccago	cgcctccacc	cgccccacac	cacaatcgct
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Thr Phe Gly Pro Ala Phe Ser Ala Val Thr Thr Ile Thr Lys Ala Asp
                             40
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Gly Thr Ser Thr Tyr Lys Gln His Cys Arg Thr Pro Ser Ser Ser
Thr Leu Ala Tyr Ser Pro Arg Asp Glu Glu Asp Ser Met Pro Pro Ile
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Ser Thr Pro Arg Arg Ser Asp Ser Ala Ile Ser Val Arg Ser Leu His
                                     90
 Ser Glu Ser Ser Met Ser Leu Arg Ser Thr Phe Ser Leu Pro Glu Glu
                                 105
             100
 Glu Glu Glu Pro Glu Pro Leu Val Phe Ala Glu Gln Pro Ser Val Lys
                             120
 Leu Cys Cys Gln Leu Cys Cys Ser Val Phe Lys Asp Pro Val Ile Thr
                                             140
                         135
 Thr Cys Gly His Thr Phe Cys Arg Arg Cys Ala Leu Lys Ser Glu Lys
                                         155
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 Cys Pro Val Asp Asn Val Lys Leu Thr Val Val Val Asn Asn Ile Ala
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Val Ala Glu Gln Ile Gly Glu Leu Phe Ile His Cys Arg His Gly Cys
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Arg Val Ala Gly Ser Gly Lys Pro Pro Ile Phe Glu Val Asp Pro Arg
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Gly Cys Pro Phe Thr Ile Lys Leu Ser Ala Arg Lys Asp His Glu Gly
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Ser Cys Asp Tyr Arg Pro Val Arg Cys Pro Asn Asn Pro Ser Cys Pro
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Pro Leu Leu Arg Met Asn Leu Glu Ala His Leu Lys Glu Cys Glu His
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Ile Lys Cys Pro His Ser Lys Tyr Gly Cys Thr Phe Ile Gly Asn Gln
                              265
          260
Asp Thr Tyr Glu Thr His Leu Glu Thr Cys Arg Phe Glu Gly Leu Lys
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Glu Phe Leu Gln Gln Thr Asp Asp Arg Phe His Glu Met His Val Ala
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                                          300
Leu Ala Gln Lys Asp Gln Glu Ile Ala Phe Leu Arg Ser Met Leu Gly
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Lys Leu Ser Glu Lys Ile Asp Gln Leu Glu Lys Ser Leu Glu Leu Lys
                                  330
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Phe Asp Val Leu Asp Glu Asn Gln Ser Lys Leu Ser Glu Asp Leu Met
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Glu Phe Arg Arg Asp Ala Ser Met Leu Asn Asp Glu Leu Ser His Ile
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                           360
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Asn Ala Arg Leu Asn Met Gly Ile Leu Gly Ser Tyr Asp Pro Gln Gln
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Ile Phe Lys Cys Lys Gly Thr Phe Val Gly His Gln Gly Pro Val Trp
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Cys Leu Cys Val Tyr Ser Met Gly Asp Leu Leu Phe Ser Gly Ser Ser
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Asp Lys Thr Ile Lys Val Trp Asp Thr Cys Thr Thr Tyr Lys Cys Gln
                               425
           420
Lys Thr Leu Glu Gly His Asp Gly Ile Val Leu Ala Leu Cys Ile Gln
                          440
Gly Cys Lys Leu Tyr Ser Gly Ser Ala Asp Cys Thr Ile Ile Val Trp
                       455
Asp Ile Gln Asn Leu Gln Lys Val Asn Thr Ile Arg Ala His Asp Asn
          470
                                      475
Pro Val Cys Thr Leu Val Ser Ser His Asn Val Leu Phe Ser Gly Ser
                                   490
            485
Leu Lys Ala Ile Lys Val Trp Asp Ile Val Gly Thr Glu Leu Lys Leu
                               505
           500
Lys Lys Glu Leu Thr Gly Leu Asn His Trp Val Arg Ala Leu Val Ala
                           520
Ala Gln Ser Tyr Leu Tyr Ser Gly Ser Tyr Gln Thr Ile Lys Ile Trp
                                           540
                       535
Asp Ile Arg Thr Leu Asp Cys Ile His Val Leu Gln Thr Ser Gly Gly
                                       555
                   550
Ser Val Tyr Ser Ile Ala Val Thr Asn His His Ile Val Cys Gly Thr
                                   570
Tyr Glu Asn Leu Ile His Val Trp Asp Ile Glu Ser Lys Glu Gln Val
                               585
Arg Thr Leu Thr Gly His Val Gly Thr Val Tyr Ala Leu Ala Val Ile
                           600
Ser Thr Pro Asp Gln Thr Lys Val Phe Ser Ala Ser Tyr Asp Arg Ser
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620
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Leu Arg Val Trp Ser Met Asp Asn Met Ile Cys Thr Gln Thr Leu Leu
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  Gly Asn Leu Leu Val Thr Gly Ala Ala Asp Gly Val Ile Arg Leu Phe
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              20
  Asp Met Gln Gln His Glu Cys Ala Met Ser Trp Arg Ala His Tyr Gly
  Glu Val Tyr Ser Val Glu Phe Ser Tyr Asp Glu Asn Thr Val Tyr Ser
                          55
  Ile Gly Glu Asp Gly Lys Val Gly Gly Ser Arg Ile Gln Ile Arg Glu
                      70
  His Arg Asp Asp Met Trp Ala Gly Cys Arg Leu Trp Pro Tyr Leu Leu
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  Leu Ala Leu Gln Pro Gly Ala Ser Phe Cys Ser Phe Val Ile Cys Arg
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180
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Phe Arg Gly Gln Leu Val Gln Pro Ala Gly Ser Val Gln Ile Pro Asp
                            40
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Asn His Ser Ser Thr Arg Ala Gln Arg Pro Gly Pro Gly Gly Arg Ser
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Ser Ala Cys Val Pro Thr Ser Thr Ser Met Arg
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Asp Lys Gly Ser Gln Val Glu Ile Val Thr Asp Asp Ile Lys Pro Gly
                             40
 Val Ala Ile Gly Gly Thr Ser Phe Pro Thr Tyr Tyr Arg Ser Met Tyr
                         55
Pro Lys Glu Val Ile Met Thr Gly Asp Met Met Leu Glu Lys Val Tyr
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80
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65
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Arg Glu Gly Asp Lys Leu Val Ala Val Leu Glu Asn Glu Tyr Thr Gly
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Ala Lys Glu Glu Arg Val Val Asp Gln Val Val Val Glu Asn Gly Val
                                105
Arg Pro Asp Glu Glu Ile Tyr Tyr Gly Leu Lys Glu Gly Ser Arg Asn
                            120
                                                125
        115
Lys Gly Gln Ile Asp Val Glu Ala Leu Phe Ala Ile Lys Pro Gln Pro
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Ser Leu Asn Thr Leu Asn Glu Glu Ala Ala Gly Asp
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Asp Pro Ala Leu Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly
                       55
Ala Gly Arg Gly Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg
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Ile His Val Arg Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln
Gln Ile Val Phe Lys Asp
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<210> 4369
<211> 1264
 <212> DNA
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 actacagaaa aggaagtagc agaaccactc ctggacctga aggaaggaat agaccagttg
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Trp Ala Phe Lys Met Asp Tyr Glu Thr Thr Glu Lys Glu Val Ala Glu
                            40
Pro Leu Leu Asp Leu Lys Glu Gly Ile Asp Gln Leu Glu Asn Asn Lys
                        55
Thr Leu Gly Phe Ile Leu Ser Thr Leu Leu Ala Ile Gly Asn Phe Leu
                                        75
                    70
Asn Gly Thr Asn Ala Lys Ala Phe Glu Leu Ser Tyr Leu Glu Lys Val
                                    90
Pro Glu Val Lys Asp Thr Val His Lys Gln Ser Leu Leu His His Val
                                105
            100
 Cys Thr Met Val Val Glu Asn Phe Pro Asp Ser Ser Asp Leu Tyr Ser
                                                 125
                             120
 Glu Ile Gly Ala Ile Thr Arg Ser Ala Lys Val Asp Phe Asp Gln Leu
                         135
 Gln Asp Asn Leu Cys Gln Met Glu Arg Arg Cys Lys Ala Ser Trp Asp
                                         155
                     150
 His Leu Lys Ala Ile Ala Lys His Glu Met Lys Pro Val Leu Lys Gln
                                     170
                 165
 Arg Met Ser Glu Phe Leu Lys Asp Cys Ala Glu Arg Ile Ile Leu
                                 185
 Lys Ile Val His Arg Arg Ile Ile Asn Arg Phe His Ser Phe Leu Leu
                                                 205
                             200
 Phe Met Gly His Pro Pro Tyr Ala Ile Arg Glu Val Asn Ile Asn Lys
                                             220
                         215
 Phe Cys Arg Ile Ile Ser Glu Phe Ala Leu Glu Tyr Arg Thr Thr Arg
                     230
 Glu Arg Val Leu Gln Gln Lys Gln Lys Arg Ala Asn His Arg Glu Arg
                                     250
                 245
 Asn Lys Thr Arg Gly Lys Met Ile Thr Asp Ser Gly Lys Phe Ser Gly
                                 265
 Ser Ser Pro Ala Pro Pro Ser Gln Pro Gln Gly Leu Ser Tyr Ala Glu
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280
Asp Ala Ala Glu His Glu Asn Met Lys Ala Val Leu Lys Thr Ser Ser
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Pro Ser Arg Ser Pro Leu His Ile Pro Ser Pro Ser Cys Gln Leu Cys
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Phe Ser
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Asn Leu Glu Asn Ala Lys Arg Phe Ala Ile Asp Ile Gly Gly Ser Leu
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Thr Lys Leu Ala Tyr Tyr Ser Thr Val Gln His Lys Val Ala Lys Val
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Arg Ser Phe Asp His Ser Gly Lys Asp Thr Glu Arg Glu His Glu Pro
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Pro Tyr Glu Ile Ser Val Gln Glu Glu Ile Thr Ala Arg Leu His Phe
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Ile Lys Phe Glu Asn Thr Tyr Ile Glu Ala Cys Leu Asp Phe Ile Lys
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Asp His Leu Val Asn Thr Glu Thr Lys Val Ile Gln Ala Thr Gly Gly
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Gly Ala Tyr Lys Phe Lys Asp Leu Ile Glu Glu Lys Leu Arg Leu Lys
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Val Asp Lys Glu Asp Val Met Thr Cys Leu Ile Lys Gly Cys Asn Phe
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Val Leu Lys Asn Ile Pro His Glu Ala Phe Val Tyr Gln Lys Asp Ser
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                                    170
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Asp Pro Glu Phe Arg Phe Gln Thr Asn His Pro His Ile Phe Pro Tyr
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            180
Leu Leu Val Asn Ile Gly Ser Gly Val Ser Ile Val Lys Val Glu Thr
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Glu Asp Arg Phe Glu Trp Val Gly Gly Ser Ser Ile Gly Gly Gly Thr
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                         215
 Phe Trp Gly Leu Gly Ala Leu Leu Thr Lys Thr Lys Lys Phe Asp Glu
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 Leu Leu His Leu Ala Ser Arg Gly Gln His Ser Asn Val Asp Met Leu
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 Val Arg Asp Val Tyr Gly Gly Ala His Gln Thr Leu Gly Leu Ser Gly
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 gaaaaagggg gggcgcaaaa atggctgggg caattataga aaacatgagc accaagaagc
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tgattgetee agggeecaca aeggeagtgt cetacatgte ggtgaaatgt gtggatgeee
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 Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
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 Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
 Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
                         55
 Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
                                         75
 Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
                                     90
 Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
 Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu
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 Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala
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 Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
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                     150
 Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr
                                      170
 Tyr Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His
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180
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Lys Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys
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Ile Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile
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His Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe
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Leu Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile
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Thr Met Met Ser Arg Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala
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tacccagggg accgetttge caagcaggee atcaggegga aggtggaget ggagtgggge
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1080
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gecegeatea ttgctgacte catacttaat etgtttggee tggggeteat tgggeetgag
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1860
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Ala Gly Pro Gly Met Leu His Thr Thr Gln Leu Tyr Gln His Val Pro
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Glu Thr Arg Trp Pro Ile Val Tyr Ser Pro Arg Tyr Asn Ile Thr Phe
Met Gly Leu Glu Lys Leu His Pro Phe Asp Ala Gly Lys Trp Gly Lys
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Val Ile Asn Phe Leu Lys Glu Glu Lys Leu Leu Ser Asp Ser Met Leu
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Val Glu Ala Arg Glu Ala Ser Glu Glu Asp Leu Leu Val Val His Thr
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Arg Arg Tyr Leu Asn Glu Leu Lys Trp Ser Phe Ala Val Ala Thr Ile
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130
Thr Glu Ile Pro Pro Val Ile Phe Leu Pro Asn Phe Leu Val Gln Arg
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Lys Val Leu Arg Pro Leu Arg Thr Gln Thr Gly Gly Thr Ile Met Ala
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Gly Lys Leu Ala Val Glu Arg Gly Trp Ala Ile Asn Val Gly Gly
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Phe His His Cys Ser Ser Asp Arg Gly Gly Phe Cys Ala Tyr Ala
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Asp Ile Thr Leu Ala Ile Lys Phe Leu Phe Glu Arg Val Glu Gly Ile
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Ser Arg Ala Thr Ile Ile Asp Leu Asp Ala His Gln Gly Asn Gly His
                                        235
                    230
Glu Arg Asp Phe Met Asp Asp Lys Cys Val Thr Cys Met Asp Val Tyr
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Asn Arg His Ile Tyr Pro Gly Asp Arg Phe Ala Lys Gln Ala Ile Arg
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                                265
            260
Arg Lys Val Glu Leu Glu Trp Gly Thr Glu Asp Asp Glu Tyr Leu Asp
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                            280
        275
Lys Val Glu Arg Asn Ile Lys Lys Ser Leu Gln Glu His Leu Pro Asp
                                            300
                        295
Val Val Val Tyr Asn Ala Gly Thr Asp Ile Leu Glu Gly Asp Arg Leu
                                        315
                    310
Gly Gly Leu Ser Ile Ser Pro Ala Gly Ile Val Lys Arg Asp Glu Leu
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                325
Val Phe Arg Met Val Arg Gly Arg Arg Val Pro Ile Leu Met Val Thr
                                                    350
                                345
Ser Gly Gly Tyr Gln Lys Arg Thr Ala Arg Ile Ile Ala Asp Ser Ile
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Leu Asn Leu Phe Gly Leu Gly Leu Ile Gly Pro Glu Ser Pro Ser Val
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Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu Thr Leu
Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln Ala Gln Leu
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Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys Ala Leu Asp Leu
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Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu Ala Leu Ala Leu Pro
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Ala Asp Gly Arg Val Val Thr Cys Glu Val Asp Ala Gln Pro Pro Glu
                                 105
            100
Leu Gly Arg Pro Leu Trp Arg Gln Ala Glu Ala Glu His Lys Ile Arg
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Leu Arg Leu Lys Pro Ala Leu Glu Thr Leu Asp Glu Leu Leu Ala Ala
                                             140
                        135
Gly Glu Ala Gly Thr Phe Asp Val Ala Val Val Asp Ala Asp Lys Glu
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                    150
Asn Cys Ser Ala Tyr Tyr Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly
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                165
Gly Ile Leu Ala Val Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln
                                 185
Pro Pro Lys Gly Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu
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Arg Ile Arg Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly
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Asp Gly Leu Thr Leu Ala Phe Lys Ile
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 Ala Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val
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 Gln Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln
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 Asp Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln
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 Gln Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu
            100
                                105
 Asp Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu
                            120
 Ser Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr
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						135					140				
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	Ser	Pne	GIY	pen	150	A311	914	2,5	•••	155	-1-				160
145	Dh a	~1··	Cur	N ra	Met	Ser	Pro	Asp	Ile	Lys	Gln	Glu	Leu	Leu	Arg
Thr	Pne	GIY	cys	165	Mee	001			170	-1-				175	_
<b>a</b>	3	T1.	C 0 T	TOD	Tare	G] v	Glv	His		Thr	Val	Thr	Asp	Leu	Gln
Cys	Asp	iie		Cys	цуз	Gry	CLY	185					190		
	_	_	180	G	t ou	T1.00	Glu		Gln	Glu	Glu	Glu		Val	Lvs
Glu	Leu		GIY	Cys	Dea	TYL	200	Jer	0111	014		205			
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Glu		Met	Ala	GIN	Pne		GIU	116	Jer	Leu	220				
	210		_	•		215	C	Wal.	tve	His		Δτσ	Asn	Leu	Gln
	Val	Val	Pro	ser		Pne	Cys	vai	цуз	235	Cys	9	11.011		240
225			_		230	-1-	T	C1	7 ~~		Dro	Glu	Acn	Val	
Lys	Met	Ser	Leu		vai	TTE	ьуs	GIU	250	Leu	FIU	GIU	AJ.	255	
		_		245		<b>~1</b>	**- 1	<b>~1</b>		C0*	Gln.	λen	Δεη	-	His
Ala	Ser	Glu		Asp	Ala	GIU	vai	GIU	Arg	Ser	GIII	ASD	270	0.1.1	
			260			_	•	265	C	т1 о	Dho	Clv	-	Λen	Live
Met	Leu		Phe	Trp	Thr	Asp			Ser	Ile	Pne	285	261	7311	цуЗ
		275			_		280			D	T		ת 1 ת	202	T.611
Asp	Leu	Met	Gly	Leu	Ala		Asn	Asp	ser	Phe	Leu	ser	ALG	261	пец
	290				_	295				•	300	G	1116	T 011	Gln.
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305					310	_	_	_		315		774.0	N	A cm	
Arg	Val	Val	Phe		Asn	Ile	Ser	Pro	Ala	Asp	Ala	HIS	Arg	ASII	Leu
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Xaa	Pro	Xaa	Ala	Leu	Arg	Gly	His	Lys	Thr	Val	Thr	Tyr	ren	Int	Leu
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Gln	Gly	Asn	Asp	Gln	Asp	Asp			Pro	Ala	Leu	Cys	GIU	vai	Leu
		355					360				_	365	•	<b>~</b>	0
Arg	His	Pro	Glu	Cys	Asn			Tyr	Leu	GIY	Leu	vai	ser	Cys	Ser
	370					375					380	_	~7	1	<b>&gt;</b>
Ala	Thr	Thr	Gln	Gln	Trp	Ala	Asp	Leu	Ser	Leu	Ala	Leu	GIU	vaı	Asn
385					390					395		_	<b>.</b>	•	400
Gln	Ser	Leu	Thr	Cys	Val	Asn	Leu	Ser	Asp	Asn	Glu	Leu	Leu	Asp	Glu
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Gly	Ala	Lys	Leu	Leu	Tyr	Thr	Thr			His	Pro	Lys	Cys	Pne	Leu
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Gln	Arg	Leu	Ser	Leu	Glu	Asn	Cys	His	Leu	Thr	Glu	Ala	Asn	Cys	Lys
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Asp	Leu	Ala	Ala	Val	Leu	Val	Val	Ser	Arg	Glu	Leu	Thr	His	Leu	Cys
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				485	i				490	)				495	
Cys	Asp	Ile	Thr	Ser	Asp	Gly	Cys	Суз	Asp	Leu	Thr	Lys	Leu	Leu	Gln
			500	)				505					510		
Glu	Lys	Ser	Ser	Leu	Leu	Cys	: Leu	Asp	Leu	ı Gly	Leu	Asn	His	Ile	Gly
		515	5				520	)				525	i		
Val	Lvs	Glv	/ Met	: Lys	Phe	Lev	Cys	Glu	Ala	. Leu	Arg	Lys	Pro	Leu	Cys
	530	)				535	;				540	+			
Asr	Leu	Arc	д Суя	Let	Trp	Let	Trp	Gly	Cys	Ser	Ile	Pro	Pro	Phe	Ser
545					550	)				555	i				560
Cvs	Glu	ı Ası	val	Cys	s Ser	Ala	Lev	ı Ser	Cys	a Asn	Glr	Ser	Leu	ı Val	. Thr
-,-		-	•	-											

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1080
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Phe Ser Ala His Tyr Asp Ala Val Glu Ala Glu Leu Lys Ser Ser Ala
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Val Arg Glu Arg Glu Arg Gln Leu Ala Lys Arg Gln His Leu Glu Glu
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Gln Arg Leu Gln Gln Glu Arg Gln Arg Glu Gln Glu Gln Arg Arg Glu
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Asp Gln Ala Asp Ala Ala Glu Ala Arg Arg Ala Gly Asn Leu Gly Lys
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Asn Pro Asp Val Asp Thr Ser Phe Leu Pro Asp Arg Asp Arg Glu Glu
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                    150
Glu Glu Asn Arg Leu Arg Glu Glu Leu Arg Gln Glu Trp Glu Ala Gln
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                165
Arg Glu Lys Val Lys Asp Glu Glu Met Glu Val Thr Phe Ser Tyr Trp
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Asp Gly Ser Gly His Arg Arg Thr Val Arg Val Arg Lys Gly Asn Thr
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Val Gln Gln Phe Leu Lys Lys Ala Leu Gln Gly Leu Arg Lys Asp Phe
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Leu Glu Leu Arg Ser Ala Gly Val Glu Gln Leu Met Phe Ile Lys Glu
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Asp Leu Ile Leu Pro His Tyr His Thr Phe Tyr Asp Phe Ile Ile Ala
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Arg Ala Arg Gly Lys Ser Gly Pro Leu Phe Ser Phe Asp Val His Asp
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            260
Asp Val Arg Leu Leu Ser Asp Ala Thr Met Glu Lys Asp Glu Ser His
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Ala Gly Lys Val Val Leu Arg Ser Trp Tyr Glu Lys Asn Lys His Ile
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Lys Tyr Thr Ile Arg
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  Leu Cys Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile
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  Arg Ile Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala
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  Val Ala Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val
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Asn Ala Ala Pro Ala Gln Pro Phe Thr Gly Pro Lys Thr Gly Thr
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Thr Gln Pro Asn Gly Gln Ile Pro Gln Ala Thr His Phe Phe Ser Ala
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 Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
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cccccgggn ggggggaag ggggggggg tttttccccc ctccccccc ccctaaaaaa
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<212> PRT
<213> Homo sapiens
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 Ser His Pro Lys Lys Pro Pro Pro Pro Gly Xaa Gly Gly Arg Gly
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 Gly Gly Phe Phe Pro Pro Pro Pro Pro Lys Lys Lys Thr Arg Lys
 Ile Phe Phe Pro Pro Pro Pro Lys Lys Lys Lys Pro Gly Gly Pro
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 Pro Phe Phe Gly Gly Gly Phe Phe Phe Phe Phe Phe Phe Phe Phe
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Arg Arg Leu Ser Arg His Asp Val Val Ile Leu Asp Ser Leu Asn Tyr
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Ile Lys Gly Phe Arg Tyr Glu Leu Tyr Cys Leu Ala Arg Ala Ala Arg
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Thr Pro Leu Cys Leu Val Tyr Cys Val Arg Pro Gly Gly Pro Ile Ala
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Gly Pro Gln Val Ala Gly Ala Asn Glu Asn Pro Gly Arg Asn Val Ser
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 Val Ser Trp Arg Pro Arg Ala Glu Glu Asp Gly Arg Ala Gln Ala Ala
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 Gly Ser Ser Val Leu Arg Glu Leu His Thr Ala Asp Ser Val Val Asn
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 Gly Ser Ala Gln Ala Asp Val Pro Lys Glu Leu Glu Arg Glu Glu Ser
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 Ala Lys His Gly Ser Gly Ala Phe Tyr Ser Pro Glu Leu Leu Glu Ala
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                                 185
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 Leu Thr Leu Arg Phe Glu Ala Pro Asp Ser Arg Asn Arg Trp Asp Arg
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 Pro Leu Phe Thr Leu Val Gly Ile Glu Glu Pro Leu Pro Pro Ala Gly
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 Ile Arg Ser Ala Leu Phe Glu Asn Arg Ala Pro Pro Pro His Gln Ser
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 Thr Gln Ser Gln Pro Leu Ala Ser Gly Ser Phe Leu His Gln Leu Asp
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 Ala Val Pro Gly Asp Leu Leu Thr Leu Pro Gly Thr Thr Glu His Leu
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 Arg Phe Thr Arg Pro Leu Thr Met Ala Glu Leu Ser Arg Leu Arg Arg
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Gln Phe Ile Ser Tyr Thr Lys Met His Pro Asn Asn Glu Asn Leu Pro
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PCT/US00/08621 WO 00/58473

10

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Ala Ser Val Gly Pro Gln Ser Tyr Gly Gly Met Arg Pro Pro Pro
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Asn Ser Leu Ala Gly Pro Gly Leu Pro Ala Met Asn Met Gly Pro Gly
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Val Arg Gly Pro Trp Ala Ser Pro Ser Gly Asn Ser Ile Pro Tyr Ser
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Ser Ser Ser Pro Gly Ser Tyr Thr Gly Pro Pro Gly Gly Gly Pro
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Pro Gly Thr Pro Ile Met Pro Ser Pro Gly Asp Ser Thr Asn Ser Ser
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Glu Asn Met Tyr Thr Ile Met Asn Pro Ile Gly Gln Gly Ala Gly Arg
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Ala Asn Phe Pro Leu Gly Pro Gly Pro Glu Gly Pro Met Ala Ala Met
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Ser Ala Met Glu Pro His His Val Asn Gly Ser Leu Gly Ser Gly Asp
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Met Asp Gly Leu Pro Lys Ser Ser Pro Gly Ala Val Ala Gly Leu Ser
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Glu Lys Leu Gln Arg Val Leu Glu Lys Ala Ala Leu Lys Leu Gly Arg
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Pro Thr Leu Ser Ser Glu Val Gly Ile Ile Cys Asp Ile Ala Asn
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Pro Ala Ser Leu Asp Glu Met Ala Lys Gln Ala Thr Val Val Leu Asn
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Cys Val Gly Pro Tyr Arg Phe Tyr Gly Glu Pro Val Ile Lys Ala Cys
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Ile Glu Asn Gly Ala Ser Cys Ile Asp Ile Ser Gly Glu Pro Gln Phe
                                               125
                           120
Leu Glu Leu Met Gln Leu Lys Tyr His Glu Lys Ala Ala Asp Lys Gly
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                       135
Val Tyr Ile Ile Gly Ser Ser Gly Phe Asp Ser Ile Pro Ala Asp Leu
                                       155
Gly Val Ile Tyr Thr Arg Asn Lys Met Asn Gly Thr Leu Thr Ala Val
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Glu Ser Phe Leu Thr Ile His Ser Gly Pro Glu Gly Leu Ser Ile His
                                185
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Asp Gly Thr Trp Lys Ser Ala Ile Tyr Gly Phe Gly Asp Gln Ser Asn
                            200
Leu Arg Lys Leu Arg Asn Val Ser Asn Leu Lys Pro Val Pro Leu Ile
                        215
 Gly Pro Lys Leu Lys Arg Arg Trp Pro Ile Ser Tyr Cys Arg Glu Leu
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 Tyr Ala Ala Tyr Val Thr Val Gly Gly Ile Thr Ser Val Ile Lys Leu
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 Thr Arg Thr Gln Arg Pro Ser Gly Phe Arg Glu Ala Ala Val Leu Gln
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PCT/US00/08621 WO 00/58473

185

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Phe Pro Thr Leu Val Ser Thr Trp Glu His Asp Leu Pro Ser His Arg
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Arg His Ala Gly Leu Leu Ser Leu Pro Asp Ile Ser Leu Glu Ala Leu
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Glu Val Ser Pro Glu Thr Val Leu Arg Leu Tyr Ser Gln Ser Ser Asp
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Gly Ala Met Arg Val Ala Arg Ala Phe Glu Arg Gly Ile Pro Val Phe
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Ile Lys Ala Leu Glu Asp Asp Glu Pro Gln Pro Glu Val Ser Leu Glu
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 Asn Ser Pro Val Leu Leu Ser Arg Leu His Phe Glu Lys Asp Ala Asp
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 Ser Ser Glu Arg Ile Ile Ala Pro Met Arg Trp Gly Leu Val Pro Ser
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 Trp Phe Lys Glu Ser Asp Pro Ser Lys Leu Gln Phe Asn Thr Thr Asn
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 Cys Arg Ser Asp Thr Val Met Glu Lys Arg Ser Phe Lys Val Pro Leu
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Val Val Lys Lys Glu Leu Arg Ala Ser Gly Ser Ser Gln Arg Met Leu
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Ser Ser Pro Lys Arg Glu Leu Pro Pro Gly Ile Gly Asp Met Val Glu
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Phe Gln Leu Lys Ile Ala Glu Leu Asn Ser Val Ile Arg Lys Leu Glu
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Arg Met Asn Lys Lys Asn Glu Asp Leu Leu Gln Ser Ile Gln Arg Met
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Glu Glu Lys Ile Lys Asn Leu Thr Arg Glu Asn Val Glu Met Lys Glu
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Lys Leu Ser Ala Gln Ala Ser Leu Lys Arg His Thr Ser Leu Asn Asp
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 Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
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 Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
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Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Leu Leu
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Leu Gln Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
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Gln Pro Glu Trp Gly Met His Gln Gln Pro Pro His Pro Pro Pro Asp
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Gln Pro Trp Met Pro Pro Thr Pro Gly Pro Met Asp Ile Val Pro Pro
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Ser Glu Asp Ser Asn Ser Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn
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Arg His Ile Phe Asn Gln Asn Asn His Asn Phe Gly Gly Pro Pro Asp
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Asn Phe Ala Val Gly Pro Val Asn Gln Phe Asp Tyr Gln His Gly Ala
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Ala Phe Gly Pro Pro Gln Gly Gly Phe His Pro Pro Tyr Trp Gln Pro
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Gly Pro Pro Gly Pro Pro Ala Pro Pro Gln Asn Arg Arg Glu Arg Pro
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Ser Ser Phe Arg Asp Arg Gln Arg Ser Pro Ile Ala Leu Pro Val Lys
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Gln Glu Pro Pro Gln Ile Asp Ala Val Lys Arg Arg Thr Leu Pro Ala
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Trp Ile Arg Glu Gly Leu Glu Lys Met Glu Arg Glu Lys Gln Lys Lys
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Leu Glu Lys Glu Arg Met Glu Gln Gln Arg Ser Gln Leu Ser Lys Lys
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Lys Lys Lys Ala Thr Glu Asp Ala Glu Gly Gly Asp Gly Pro Arg Leu
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Pro Gln Arg Ser Lys Phe Asp Ser Asp Glu Glu Glu Glu Asp Thr Glu
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Asn Val Glu Ala Ala Ser Ser Gly Lys Val Thr Arg Ser Pro Ser Pro
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Val Pro Gln Glu Glu His Ser Asp Pro Glu Met Thr Glu Glu Glu Lys
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 Glu Tyr Gln Met Met Leu Leu Thr Lys Met Leu Leu Thr Glu Ile Leu
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 Leu Asp Val Thr Asp Glu Glu Ile Tyr Tyr Val Ala Lys Asp Ala His
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 Arg Lys Ala Thr Lys Ala Pro Ala Lys Gln Leu Ala Gln Ser Ser Ala
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 Asp Ser Glu Asp Glu Arg Ser Asp Arg Gly Ser Glu Ser Ser Asp Thr
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Glu Glu Lys Gln Gln Thr Glu Arg Val Thr Lys Glu Met Asn Glu Phe
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Ile His Lys Glu Gln Asn Ser Leu Ser Leu Leu Glu Ala Arg Glu Ala
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Ser Val Leu Glu Pro Lys Lys Glu His Lys Glu Lys Glu Lys Gln Gly
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 Gly Asn Ser His Lys His Lys Gly Glu Ala Lys Glu Gln Glu Arg Lys
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 Glu Lys Asp Phe Lys Phe Ser Ser Gln Asp Asp Arg Leu Lys Arg Lys
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 Arg Glu Ser Glu Arg Thr Phe Ser Arg Ser Gly Ser Ile Ser Val Lys
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 Ile Ile Arg His Asp Ser Arg Gln Asp Ser Lys Lys Ser Thr Thr Lys
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 Asp Ser Lys Lys His Ser Gly Ser Asp Ser Ser Gly Arg Ser Ser Ser
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 Glu Ser Pro Gly Ser Ser Lys Glu Lys Lys Ala Lys Lys Pro Lys His
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 Gly Asn Lys Ser Asp Leu Ser Gln Ala Arg Glu Val Pro Thr Glu Glu
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 Ala Arg Met Phe Ala Glu Asn Asn Gly Leu Leu Phe Leu Glu Thr Ser
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 Ala Leu Asp Ser Thr Asn Val Glu Leu Ala Phe Glu Thr Val Leu Lys
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Glu Ile Phe Ala Lys Val Ser Lys Gln Arg Gln Asn Ser Ile Arg Thr
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Gly Glu Lys Arg Ala Cys Cys Ile Ser Leu
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Ala Tyr Asp Met Val Leu Val Glu Asp Glu Glu Val Asn Arg Met His
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Glu Ser Leu His Leu Phe Asn Ser Ile Cys Asn His Lys Tyr Phe Ser
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Thr Thr Ser Ile Val Leu Phe Leu Asn Lys Lys Asp Ile Phe Gln Glu
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Lys Val Thr Lys Val His Leu Ser Ile Cys Phe Pro Glu Tyr Thr Gly
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Pro Asn Thr Phe Glu Asp Ala Gly Asn Tyr Ile Lys Asn Gln Phe Leu
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Asp Leu Asn Leu Lys Lys Glu Asp Lys Glu Ile Tyr Ser His Met Thr
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Cys Ala Thr Asp Thr Gln Asn Val Lys Phe Val Phe Asp Ala Val Thr
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Asp Ile Ile Ile Lys Glu Asn Leu Lys Asp Cys Gly Leu Phe
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Pro Glu Pro Glu Glu Ala Gly Arg Arg Gly Gly Lys Arg Pro Lys Pro
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Gly Leu Gly Ala Lys Val Lys Leu Glu Glu Lys Gln His His Pro Cys
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Gln Lys Cys Pro Arg Val Phe Asn Asn Arg Trp Tyr Leu Glu Lys His
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Met Asn Val Thr His Ser Arg Met Gln Ile Cys Asp Gln Cys Gly Lys
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Trp Ser Leu His Glu His Asn Lys Ile Val His Gly Tyr Ala Glu Lys
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 Ala Gln Ala Val Cys Pro Leu Phe Ser Ser Trp Cys Pro Ala Pro Pro
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 Arg Cys His Leu Pro Gln Trp Gln Trp Gly Phe Ile Thr Gly Ser Ser
 Gly Pro Leu Pro Met Ala Gly Gly Val Pro Gly Gly Pro Asn Gln Ala
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80
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Ala Pro Ala Ser Arg Gln Arg Val Gly Phe Leu Gly Gln Pro Gln Ser
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Cys Gln Arg Gln His Val Ser Leu His Arg Ser His Gln Ala Pro Leu
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1097
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120
attattgaat acacaaaagg aatgttaccg ttacttgttc atagtcaaag gtgaagttaa
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Leu Asn Tyr Leu Ile Leu Leu Pro Asn Ile Thr Glu Val Met Arg Ser
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Val Gly Val Ile
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Leu Glu Glu Thr Asn Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys
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Lys Met Gln Ala Ala Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile
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Gly Glu Leu Asp Arg Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln
                                105
            100
Leu Gln Leu Gln Leu Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu
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                            120
Thr Asp Ser Asp Lys Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala
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                        135
Ser Leu Arg Glu Arg Ile Arg His Leu Asp Asp Met Val His Cys Gln
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Gln Lys Lys Val Lys Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys
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Lys Val Gln Gln Lys Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile
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            180
Ser Phe Leu Glu Gly Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr
Leu Thr Glu Thr Gln Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly
                        215
Val Gly Cys Asp Leu Leu Pro Ser Pro Thr Gly Arg Thr Arg Glu Ile
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                                25
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                            40
Leu Ser Cys Pro Ser His Pro Ser Xaa Asn Tyr Arg Pro Val Pro Pro
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120
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600	•	tgcatctcag			
660		gaaggccatt		*	
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 Lys Ala Leu Gly Lys Asn Arg Ser Ala Asp Phe Asn Pro Asp Phe Val
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 Phe Thr Glu Lys Glu Gly Thr Tyr Asp Gly Ser Trp Ala Leu Ala Asp
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 Val Met Ser Gln Leu Lys Lys Lys Arg Ala Ala Thr Thr Leu Asp Glu
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 Lys Ser Gly Lys Leu Glu Lys Glu Lys Glu Ala Lys Glu Gly Ser Glu
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715					150					155					100
Thr	Lys	Ala	Asp		Leu	Lys	Val	Lys	170	Arg	гåг	гåа	Lys	175	гåа
	<b>~1</b>	a1	~1	165	Glv	Glv	Dhe	Phe		Asp	Ala	Ser	Gln		Asp
гàг	GIY	GIII	180	MIA	Giy	GIY	- 110	185					190	•	-
Glu	Asn	Leu	Ser	Phe	Gln	Asp	Met	Asn	Leu	Ser	Arg	Pro	Leu	Leu	Lys
		195					200					205			
Ala	Ile	Thr	Ala	Met	Gly	Phe	Lys	Gln	Pro	Thr	Pro	Ile	Gln	Lys	Ala
	210					215					220				
Cys	Ile	Pro	Val	Gly		Leu	Gly	Lys	Asp	Ile	Cys	Ala	Cys	Ala	A1A 240
225			_		230		- 1 -	DL -	77.	235	D×o	17-1	T 011	Glu	
Thr	Gly	Thr	Gly		Thr	Ala	Ala	Pne	250	Leu	PIO	vaı	Leu	255	nr 9
_	-1.	<b></b>		245	A ~~~	Gla	בות	Pro		Thr	Ara	Val.	Leu		Leu
Leu	11e	Tyr	ьуs 260	Pro	Arg	GIII	ATG	265	V CL _				270		
v-1	Dro	Thr	Ara	Glu	Leu	Glv	Ile		Val	His	Ser	Val	Thr	Arg	Gln
		275					280					285			
Leu	Ala	Gln	Phe	Cys	Asn	Ile	Thr	Thr	Cys	Leu	Ala	Val	Gly	Gly	Leu
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Ile	Ala	Thr	Pro	Gly 325	Arg	Leu	Ile	Asp	His		His	Asn	Cys	335	Ser
Dhe	Wie	Leu	Ser		Ile	Glu	Val	Leu			Asp	Glu	Ala	Asp	Arg
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Met	Leu	Asp	Glu	Tyr	Phe	Glu	Glu	Gln	Met	Lys	Glu	Ile	Ile	Arg	Met
		355					360					365			
Cys	Ser	His	His	Arg	Gln			Leu	Phe	Ser	Ala	Thr	Met	Thr	Asp
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	Val	Lys	Asp	Leu	390		vai	261	neu	395	ASII	110	742	•••	Ile 400
385	17-1	) an	50×	Acn	Thr	Δεη	Val	Ala	Pro			Arq	Gln	Glu	Phe
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Ile	Arg	Ile	Arq	Pro	Asn	Arg	Glu	Gly	Asp	Arg	Glu	Ala	Ile	Val	Ala
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GIU	Ala	пел	AIG	485		. uys	. voř	, 410	490					495	
Thr	Acn	. Val	Δla	Ala	Aro	r Glv	Leu	. Ast			Gly	Val	Lys	Thr	Val
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Tle		_	. The		Dro	Asn	Thr	Ile	Lys	His	Tyr	Val	His	Arg	Val
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Gly	Arg	515 Thr	Ala	Arg	, Ala	Gly 535	520 Arg	) Ala	Gly	Arg	Ser 540	Val	. Ser	Leu	

PCT/US00/08621 ~ WO 00/58473

555

570

575

550

Ala Pro Val Lys Ala Arg Ile Leu Pro Gln Asp Val Ile Leu Lys Phe

545

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Pro Glu Arg Ser Trp Phe Gln Thr Lys Glu Glu Arg Lys Lys Glu Lys
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Ile Ala Lys Ala Leu Gln Glu Phe Asp Leu Ala Leu Arg Gly Lys Lys
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Lys Arg Lys Lys Phe Met Lys Asp Ala Lys Lys Lys Gly Glu Met Thr
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Ala Glu Glu Arg Ser Gln Phe Glu Ile Leu Lys Ala Gln Met Phe Ala
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Glu Arg Leu Ala Lys Arg Asn Arg Arg Ala Lys Arg Ala Arg Ala Met
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Pro Glu Glu Glu Pro Val Arg Gly Pro Ala Lys Lys Gln Lys Gln Gly
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Lys Lys Ser Val Phe Asp Glu Glu Leu Thr Asn Thr Ser Lys Lys Ala
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PCT/US00/08621 WO 00/58473

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Ala Pro Gln Pro Arg Arg Lys Pro Ser Phe Gln Thr Val Gly Ile Pro
Phe Ile Pro Trp His Arg Glu Pro Lys Gly Met Gln Thr Asp Pro Gly
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Arg Ala Leu His Ser Gln Thr Leu Ala Arg Thr Arg Arg Leu Gly Ala
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Pro Arg Arg Ala Leu Pro Pro Arg Pro Pro Pro Pro Ala Asp Ser Pro
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Leu Cys Glu Leu Asn His Leu Gly Ala Met Cys Arg Gly Arg Ala Ser
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Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
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Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
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Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
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Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
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Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Gly Gly Asp
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Leu Arg Tyr His Leu Gln Gln Asn Val His Phe Thr Glu Gly Thr Val
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Lys Leu Tyr Ile Cys Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg
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                   70
Tyr His Ile Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp
                                   90
               85
Glu His Gly His Val His Ile Thr Asp Phe Asn Ile Ala Thr Val Val
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Lys Gly Ala Glu Arg Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met
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Ala Pro Glu Val Phe Gln Val Tyr Met Asp Arg Gly Pro Gly Tyr Ser
                                            140
                       135
Tyr Pro Val Asp Trp Trp Ser Leu Gly Ile Thr Ala Tyr Glu Leu Leu
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                    150
Arg Gly Trp Arg Pro Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu
                                    170
Ile Leu Asn Met Phe Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp
                                                    190
                                185
Cys Lys Gly Met Val Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro
                                                205
                            200
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Glu Ser Arg Val Ser Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu
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Ala Asp Met Asn Trp Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly
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  Gln Ala Val Arg Gln Asn Gly Leu Met Ser Gly Leu Met Gln Met Leu
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  Leu Leu Lys Val Ser Ala His Ile Thr Glu Gln Leu Gly Met Ala Pro
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  Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
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  Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
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  Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
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                          135
  Leu Cys Phe Leu Ser Asp Pro Ile Ser Lys Asp Asp Val Glu Arg Cys
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  Lys Gln Lys Asp Leu Leu Glu Gln Met Met Ala Glu Met Ile Gly Glu
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Arg Ile Gly Arg Phe Gly Tyr Gly Tyr Gly Pro Tyr Gln Pro Val Pro
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1860					: atgcggggac
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Trp Lys Glu Lys Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser
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Trp Arg Leu Trp Ala Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val
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Val Leu Asn Glu Phe Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser
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 Tyr Tyr Leu Lys Ile Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp
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 Thr Phe Gln Ser Pro Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu
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 Gln Ile Gln Met Glu Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly
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  Cys Trp Val Gly Ser Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr
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  Ile Tyr Asp Thr Ile Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn
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PCT/US00/08621 WO 00/58473

335

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Gly Ser Glu Tyr Ile Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr
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Val His Phe Gly Thr Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser
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Glu Tyr Ile Ala Gly Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly
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Tyr Gly Asn Ala Ser Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala
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Ser Asp Asp Leu Glu Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu
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Ala Arg Gly Leu Glu Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr
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Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn
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Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln Arg Ser Gly Thr Ser
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Lys Ala Gly Leu Gln Glu Val Arg Pro Ala Leu Gln Ala Thr Pro Val
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Leu Gly Leu Leu Ser Ser Ser Phe Leu Arg Val Thr Glu Pro Gly
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  720
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atggcaaaac cccatctcca caaaaattgg ataatttgat aattatcatt attgggtttc
780
tgagacgtta cacatttaac attetettet gcacaagttg cetttgtgtg agtatactaa
ctttctgtag aggtatactt gtaatcacaa ataagaataa attatataaa acaaaaaaaa
900
901
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<213> Homo sapiens
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Met Leu Gln Trp Ile Thr Gln His Pro Ser Gln Gly Pro Met Pro Leu
Lys Met Asp Leu Pro Pro Gly Asp Pro Gly Val Leu Pro Leu Ser Cys
                                25
Pro Gln Glu Cys Pro Asp Pro His Ser Tyr Pro Gly Pro Arg Ser Pro
                             40
Thr Pro Gly Leu Pro Ser Ser Ala Val Asn Asp Asp Leu Leu Leu
Pro Ser Ser Leu Pro Ser Val Thr Lys Gly Leu Pro Arg Cys Gln Leu
                     70
Trp Asn Glu Gly Cys Pro Trp Glu Val Met Ile Leu Arg Tyr Thr Gly
Ala Gln Gln Ile Ala Ser Ser Tyr Pro Gln Thr Val Phe Ala Cys Met
                                 105
             100
 Gln Pro Leu Ala Leu Pro Leu Cys Gly Arg Lys Pro Ala Gln Gly His
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 Thr Ala Gly Gln Gln His Ser Trp Ser Gln Ile
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 <210> 4447
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 <212> DNA
 <213> Homo sapiens
 <400> 4447
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 gtggtgggct atggccgcct cggacagtcc cttgtgtccc gccttctggc tcagggatca
 gaactgggcc tagaacttgt ttttgtgtgg aaccgtgacc ctggacgaat ggcagggagt
 gtgcccctg ccctgcagct cgaagacctc actacacttg aggaaaggca ccctgacctt
 gtggtagaag tggcccatcc aaaaataatc catgaatctg gggtacaaat cctccgtcat
 gcaaacette tgageetteg tgteaceatg gccacaeaee eegatggett eeggettgag
  420
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ggacccctgg ctgcagccca cagccctggg ccttgcactg tgctctacga aggccctgtc
cgtgggctct gcccctttgc cccgcgaaat tccaacacca tggcggcggc tgccctggct
gececcagee tgggettega tggggtgatt ggggtgeteg tggetgatae cageeteaeg
gacatgcacg tggtggatgt agagctgagc ggaccccggg gccccacggg ccgaagcttt
gctgtgcaca cccgcagaga gaaccctgcc gagccaggcg cggtcaccgg ctccgccacc
gtcacggcct tctggcggag cctcctggcc tgctgccagc tcccctccag gccggggatc
catctetget gagaageete eteceteeeg agacaagate atetgeetgg eeteteacea
ccaccatece acceetgeee tgeeceaett ecceagggte tecettetga etcagtaaag
atcaccgctg cctcccccg caaaaaaaaa aaaaaaaaa aaaaaaaaa a
951
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<211> 263
<212> PRT
<213> Homo sapiens
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Arg Cys Pro Lys Ser Ser Gly Cys Pro Gly Leu Val Gln Arg Ala Ala
Ser Ser Pro Gly Ser Gln Ala Pro Asp Thr Ala Leu Arg Ala Met Ala
                                25
Asp Arg Gly Pro Trp Arg Val Gly Val Val Gly Tyr Gly Arg Leu Gly
                            40
Gln Ser Leu Val Ser Arg Leu Leu Ala Gln Gly Ser Glu Leu Gly Leu
Glu Leu Val Phe Val Trp Asn Arg Asp Pro Gly Arg Met Ala Gly Ser
                                        75
Val Pro Pro Ala Leu Gln Leu Glu Asp Leu Thr Thr Leu Glu Glu Arg
                                    90
His Pro Asp Leu Val Val Glu Val Ala His Pro Lys Ile Ile His Glu
            100
                                105
Ser Gly Val Gln Ile Leu Arg His Ala Asn Leu Leu Ser Leu Arg Val
                            120
Thr Met Ala Thr His Pro Asp Gly Phe Arg Leu Glu Gly Pro Leu Ala
                        135
Ala Ala His Ser Pro Gly Pro Cys Thr Val Leu Tyr Glu Gly Pro Val
                                        155
                     150
Arg Gly Leu Cys Pro Phe Ala Pro Arg Asn Ser Asn Thr Met Ala Ala
                                    170
Ala Ala Leu Ala Ala Pro Ser Leu Gly Phe Asp Gly Val Ile Gly Val
                                 185
 Leu Val Ala Asp Thr Ser Leu Thr Asp Met His Val Val Asp Val Glu
                             200
 Leu Ser Gly Pro Arg Gly Pro Thr Gly Arg Ser Phe Ala Val His Thr
 Arg Arg Glu Asn Pro Ala Glu Pro Gly Ala Val Thr Gly Ser Ala Thr
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235
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225
Val Thr Ala Phe Trp Arg Ser Leu Leu Ala Cys Cys Gln Leu Pro Ser
Arg Pro Gly Ile His Leu Cys
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<211> 1365
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tcaagcattg gaagaattta gggaaaaaaaa tcagagatta caaaaattat gggttggaag
attaattctg tattcctcag ttctctatct gtttacatgc ttaattgtat atttgtggta
tetteetgat gaatttacag caagaettge catgacacte ceattttttg ettttecatt
gatcatctgg agcataagaa cagtaattat tttcttcttt tccaagagaa cagaaagaaa
taatgaagca ttggatgatt taaaatccca gaggaaaaaa atacttgaag aagtcatgga
aaaagaaact tacaagacgg ctaaattaat tottgaaagg tttgatccgt actcaaagaa
agcaaaggag tgtgagccgc catctgctgg agcagctgta actgcaagac ctggacaaga
gattegteag egaactgeag etcaaagaaa cettteteaa caccageaag eeetaaceag
 540
 ggeeeteete cacaagttee agtateteet ggaeeaccaa aggaeagtte tgeeeetggt
 ggacccccag aaaggactgt tactccagcc ctatcatcaa atgtgttacc aagacatctt
 ggatecectg ctactteagt geetggaatg ggtetteate etceaggtee acetttagea
 agacctattc tcccccgaga acgaggtgct ttggatagaa ttgttgaata tttggttggt
 gatggtccac aaaacaggta tgcacttata tgtcagcagt gtttttctca taatggcatg
 gctttgaagg aagaatttga atacattgct tttcgatgtg cctactgttt tttcttgaac
 caggtggtgg aaggttcaag ttcagttggt cccttgccat caggaagtgt gctttcatca
 gacaaccagt ttaatgaaga atctttagaa cacgatgttc ttgatgataa tacagagcag
 1140
 acagatgaca aaataccagc tacagaacag acaaaccaag tgattgaaaa agcatctgac
  tcagaggaac cagaggagaa acaagagact gagaatgagg aagcctcagt gattgaaacc
  1260
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aactccacag ttcctggagc tgattctatt cctgatcctg aactaagtgg agaatctttg
acggcagagt agtaaatgct tccacgtgcc ttcaactgga aaaaa
1365
<210> 4450
<211> 194
<212> PRT
<213> Homo sapiens
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                                    10
Arg Glu Arg Gly Ala Leu Asp Arg Ile Val Glu Tyr Leu Val Gly Asp
            20
Gly Pro Gln Asn Arg Tyr Ala Leu Ile Cys Gln Gln Cys Phe Ser His
                             40
        35
Asn Gly Met Ala Leu Lys Glu Glu Phe Glu Tyr Ile Ala Phe Arg Cys
                         55
Ala Tyr Cys Phe Phe Leu Asn Pro Ala Arg Lys Thr Arg Pro Gln Ala
                     70
Pro Arg Leu Pro Glu Phe Ser Phe Glu Lys Arg Gln Val Val Glu Gly
                                                         95
                                     90
                 85
 Ser Ser Ser Val Gly Pro Leu Pro Ser Gly Ser Val Leu Ser Ser Asp
                                 105
 Asn Gln Phe Asn Glu Glu Ser Leu Glu His Asp Val Leu Asp Asp Asn
                                                 125
                             120
 Thr Glu Gln Thr Asp Asp Lys Ile Pro Ala Thr Glu Gln Thr Asn Gln
         115
                         135
 Val Ile Glu Lys Ala Ser Asp Ser Glu Glu Pro Glu Glu Lys Gln Glu
                                         155
                     150
 Thr Glu Asn Glu Glu Ala Ser Val Ile Glu Thr Asn Ser Thr Val Pro
                                     170
                 165
 Gly Ala Asp Ser Ile Pro Asp Pro Glu Leu Ser Gly Glu Ser Leu Thr
                                                      190
                                  185
 Ala Glu
 <210> 4451
 <211> 1637
 <212> DNA
 <213> Homo sapiens
  <400> 4451
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  gettggatet tetegetetg tgaccageet gggecacaca etggtggaat etgeteteae
  gaggeettee etgeecagte eccacaggae etcacetagg gtggaggaga gcaacagcaa
  gctcctggag tcagagagga agctgcagga ggagcgacac cgcaccgtgg tcttggagca
  180
  acatetggag aagatacgee tggagecagg gaaggeatea geeteecaga gageagetee
  300
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caggaccaaa acagctccgc tcctggatgt atgctgtgta cggggccttg gctgtgatgg
gcacaatggg cccttggtac ctgctgctgc tgcttggtca ctgtgtgggc ctctatgtgg
cetegetttt gggccagece tggctetgte ttggcettgg ettggecage etggeeteet
tcaagatgga ccccctaatc tcttggcaga gcgggtttgt aacaggcact tttgatcttc
aagaggtgct gtttcatggg ggcagcagct tcacagtgct gcgttgcacc agctttgcac
tggagagetg tgcccaccet gaccgccact nactcettag etgacetget caagtacaac
ttctacctgc cettettett ettegggece ateatgacet ttgategett ceatgeteag
gtgagccagg tggagccagt gagacgcgag ggtgagctgt ggcacatccg agcccaggca
ggcctaagcg tggtggccat catggccgtc gacatettet ttcaettett etacateete
actatececa gegaceteaa gttegecaae egeeteecag acagtgeeet egetggeeta
gcctattcaa acctggtgta tgactgggtg aaggcggccg tcctctttgg tgttgtcaac
 actgtggcat geotegacea ectggaceca ecceageete ecaagtgeat cacegeacte
 tacgtctttg cggaaacgca ctttgaccgt ggcatcaacg actggctttg caaatatgtg
 tataaccaca ttggtgggga gcattccgct gtgatcccag agctggcagc cacagtggcc
 acatttgcca tcaccacact gtggcttggg ccttgtgaca ttgtctacct gtggtcattc
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 ggagccatga acttctgggc catcatcatg tacaaccttg tgagcctgaa cagcctcaaa
 ttcacagage tggttgeeeg gegeetgeta etcacagggt teeeccagae caegetgtee
 atcetgtttg teacetactg tggcgtecag etggtaaagg agegtgageg aacettggea
 ctggaggagg agcagaagca ggacaaagag aagccggagt aggagggagc gggtagagg
  atgggetetg etcagetatt ettgggecag atggggeetg acegatagaa taaaagaett
  1620
  ttctacaaca aaaaaaa
  1637
  <210> 4452
  <211> 328
  <212> PRT
  <213> Homo sapiens
  Met Gly Ala Ala Ala Ser Gln Cys Cys Val Ala Pro Ala Leu His Trp
  <400> 4452
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                               25
Lys Tyr Asn Phe Tyr Leu Pro Phe Phe Phe Gly Pro Ile Met Thr
                            40
Phe Asp Arg Phe His Ala Gln Val Ser Gln Val Glu Pro Val Arg Arg
                        55
Glu Gly Glu Leu Trp His Ile Arg Ala Gln Ala Gly Leu Ser Val Val
                    70
Ala Ile Met Ala Val Asp Ile Phe Phe His Phe Phe Tyr Ile Leu Thr
                                    90
Ile Pro Ser Asp Leu Lys Phe Ala Asn Arg Leu Pro Asp Ser Ala Leu
Ala Gly Leu Ala Tyr Ser Asn Leu Val Tyr Asp Trp Val Lys Ala Ala
                            120
Val Leu Phe Gly Val Val Asn Thr Val Ala Cys Leu Asp His Leu Asp
                       135
Pro Pro Gln Pro Pro Lys Cys Ile Thr Ala Leu Tyr Val Phe Ala Glu
                                        155
                    150
Thr His Phe Asp Arg Gly Ile Asn Asp Trp Leu Cys Lys Tyr Val Tyr
                                   170
               165 ---
Asn His Ile Gly Gly Glu His Ser Ala Val Ile Pro Glu Leu Ala Ala
                                185
            180
Thr Val Ala Thr Phe Ala Ile Thr Thr Leu Trp Leu Gly Pro Cys Asp
                            200
 Ile Val Tyr Leu Trp Ser Phe Leu Asn Cys Phe Gly Leu Asn Phe Glu
                                            220
                        215
Leu Trp Met Gln Lys Leu Ala Glu Trp Gly Pro Leu Ala Arg Ile Glu
                                        235
                    230
 Ala Ser Leu Ser Val Gln Met Ser Arg Arg Val Arg Ala Leu Phe Gly
                                     250
                245
 Ala Met Asn Phe Trp Ala Ile Ile Met Tyr Asn Leu Val Ser Leu Asn
                                265
            260
 Ser Leu Lys Phe Thr Glu Leu Val Ala Arg Arg Leu Leu Thr Gly
                            280
 Phe Pro Gln Thr Thr Leu Ser Ile Leu Phe Val Thr Tyr Cys Gly Val
                                            300
                         295
 Gln Leu Val Lys Glu Arg Glu Arg Thr Leu Ala Leu Glu Glu Gln
                                        315
                     310
 Lys Gln Asp Lys Glu Lys Pro Glu
                 325
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  <212> DNA
  <213> Homo sapiens
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  agecatgatt atectagttg teacettgea cacetgecat ceggtgecat etectggetg
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gcacatctat acccactctg gctctgaaag gcttgtcaac caaaaatggg cagctggggc

180

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taaggcatat ttaaacaaag gctccaaagg acceetttca ettgggteta gcatecagee
teteteteag caaaggeagg attgtggtee ettgtgtttt etgaacaggg eecagggeag
ccaaggcatg ccatcactgc agcactcaac cctctggtca cagtggagtc gccggtccag
cctgaaatat tactacagag gagaaagacc cattettget atgttgetet atettecacg
420
tccaaaaaca gtcctatgta gcttcagctg ctccgaaatc aggtcacaga acagcaggag
acatteettt ggcaaaaaag gacaegettt tgteetgtat ettataetgg taagtgaage
tetgateceg gtggaetgeg ggetgegatg gteteeteea caggateete agetacagag
acagagaaga atgaaagagg agcagccacc ccaggacctg ctccactggg aaccccaccc
taccttctct gtgcccttca cgcgt
<210> 4454
<211> 207
<212> PRT
<213> Homo sapiens
 <400> 4454
Met Ile Ile Leu Val Val Thr Leu His Thr Cys His Pro Val Pro Ser
Pro Gly Trp His Ile Tyr Thr His Ser Gly Ser Glu Arg Leu Val Asn
                                 25
Gln Lys Trp Ala Ala Gly Ala Lys Ala Tyr Leu Asn Lys Gly Ser Lys
                             40
 Gly Pro Leu Ser Leu Gly Ser Ser Ile Gln Pro Leu Ser Gln Gln Arg
                                             60
 Gln Asp Cys Gly Pro Leu Cys Phe Leu Asn Arg Ala Gln Gly Ser Gln
                                         75
                     70
 Gly Met Pro Ser Leu Gln His Ser Thr Leu Trp Ser Gln Trp Ser Arg
                                     90
 Arg Ser Ser Leu Lys Tyr Tyr Tyr Arg Gly Glu Arg Pro Ile Leu Ala
                                 105
             100
 Met Leu Leu Tyr Leu Pro Arg Pro Lys Thr Val Leu Cys Ser Phe Ser
                             120
 Cys Ser Glu Ile Arg Ser Gln Asn Ser Arg Arg His Ser Phe Gly Lys
                         135
                                             140
 Lys Gly His Ala Phe Val Leu Tyr Leu Ile Leu Val Ser Glu Ala Leu
                                         155
                     150
 Ile Pro Val Asp Cys Gly Leu Arg Trp Ser Pro Pro Gln Asp Pro Gln
                                     170
                 165
 Leu Gln Arg Gln Arg Arg Met Lys Glu Glu Gln Pro Pro Gln Asp Leu
                                 185
             180
 Leu His Trp Glu Pro His Pro Thr Phe Ser Val Pro Phe Thr Arg
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  <210> 4455
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<211> 882

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<212> DNA
<213> Homo sapiens
<400> 4455
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aagetgttea ttgggeagat eeccegeaac etggatgaga aggaceteaa geecetette
gaggagtttg gcaaaatcta cgagcttacg gttctgaagg acaggttcac aggcatgcac
aaaggetgeg cetteeteac etactgegag egtgagteag egetgaagge eeagagegeg
ctgcacgagc agaagactct gcccgggatg aaccggccga tccaggtgaa gcctgcggac
agcgagagec gaggagatag tagctgcctg cgccagcccc cttcacatag aaaactcttc
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gggaacatcg aggagtgcac catcctgcgc gggcccgacg gcaacagcaa ggggtgcgcc
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atccctttcg gggcctacgg cgcctacgct caggcactga tgcagcagca agcggccctg
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 882
 <210> 4456
 <211> 261
 <212> PRT
 <213> Homo sapiens
 <400> 4456
 Met Lys Asp His Asp Ala Ile Lys Leu Phe Ile Gly Gln Ile Pro Arg
 Asn Leu Asp Glu Lys Asp Leu Lys Pro Leu Phe Glu Glu Phe Gly Lys
                                 25
 Ile Tyr Glu Leu Thr Val Leu Lys Asp Arg Phe Thr Gly Met His Lys
 Gly Cys Ala Phe Leu Thr Tyr Cys Glu Arg Glu Ser Ala Leu Lys Ala
 Gln Ser Ala Leu His Glu Gln Lys Thr Leu Pro Gly Met Asn Arg Pro
 Ile Gln Val Lys Pro Ala Asp Ser Glu Ser Arg Gly Asp Ser Ser Cys
 Leu Arg Gln Pro Pro Ser His Arg Lys Leu Phe Val Gly Met Leu Asn
```

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105
Lys Gln Gln Ser Glu Asp Asp Val Arg Arg Leu Phe Glu Ala Phe Gly
                                                125
                            120
       115
Asn Ile Glu Glu Cys Thr Ile Leu Arg Gly Pro Asp Gly Asn Ser Lys
                                            140
                        135
    130
Gly Cys Ala Phe Val Lys Tyr Ser Ser His Ala Glu Ala Gln Ala Ala
                    150
Ile Asn Ala Leu His Gly Ser Gln Thr Met Pro Gly Ala Ser Ser Ser
                                    170
                165
Leu Val Val Lys Phe Ala Asp Thr Asp Lys Glu Arg Thr Met Arg Arg
                                185
Met Gln Gln Met Ala Gly Gln Met Gly Met Phe Asn Pro Met Ala Ile
                            200
Pro Phe Gly Ala Tyr Gly Ala Tyr Ala Gln Ala Leu Met Gln Gln Gln
                        215
Ala Ala Leu Met Ala Ser Val Ala Gln Gly Gly Tyr Leu Asn Pro Met
                                         235
                    230
Ala Ala Phe Ala Ala Ala Gln Met Gln Met Ala Ala Leu Asn Met
Asn Gly Leu Ala Ala
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 <212> DNA
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  cgcgggacca gagtggagcc cgaagggcgg ggcgagggct accagaatct gggagcctgg
  780
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ggggcgggga caccatcgga ggggcggggc ctgtctgtgg acgtgggcgt ggtgctggcc
gaccccggct gcatcgaggc ctcggtgaag caggaggtcc tgattaatcg caactcggtg
ctattttcga ttacgctcaa ggataaaaag ctttgctatg accaaggcat tagtggacat
960
caccttatgg agacttccat gacggtcaat gtgaggtcca agcctggagg ggagggcaag
egectggeet tegacateae etacaegetg gaatacagee geetgaagaa caaacaetae
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gttetgetgg tggtgggtgg egggeecaca etggaeagee teaaggaeta eagtgaggae
gaaatctacc gcttcaacag ccccctggac aagaccaaca gccttatctg gaccacgagg
accacaagga ccaccaaaga ctcagccttt cacatcatgt cccacgagag cccaggcatc
gagtggetet gtetggagaa tgeeccatge tatgacaatg tteeccaagg catetttgee
cctgaattct tcttcaaggt gttggtgagc aataggtgag ccaggcaagt ggcccaggtg
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1491
<210> 4458
 <211> 405
 <212> PRT
 <213> Homo sapiens
 <400> 4458
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 Gln Leu Leu Met Tyr Gln Gln His Thr Ser His Tyr Asp Leu Glu Arg
 Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp Phe Cys Pro Phe Ser
                             40
 Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln Arg Tyr Thr Arg Gln
 Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu Glu Arg Ser Gly Phe
                                         75
                     70
 His Asn Glu Asn Ser Leu Ala Ile Tyr Gln Gly Leu Val Tyr Tyr Leu
 Leu Trp Leu His Ser Val Tyr Asp Lys Asp Tyr Tyr Phe Phe Leu Ala
                                 105
             100
 Ser Asn Trp Arg Ser Ala Gly Gly Val Ser Ile Glu Met Asp Ser Tyr
                             120
 Glu Lys Ile Tyr Asn Leu Glu Ser Ala Tyr Glu Leu Pro Glu Arg Ile
                          135
 Phe Leu Asp Lys Gly Thr Glu Tyr Ser Phe Ala Ile Phe Leu Ser Ala
                                          155
                      150
 145
 Gln Gly His Ser Phe Arg Thr Gln Ser Glu Leu Gly Leu Arg Gly Thr
                                      170
                  165
 Arg Val Glu Pro Glu Gly Arg Gly Glu Gly Tyr Gln Asn Leu Gly Ala
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190
                                185
            180
Trp Gly Ala Gly Thr Pro Ser Glu Gly Arg Gly Leu Ser Val Asp Val
                            200
Gly Val Val Leu Ala Asp Pro Gly Cys Ile Glu Ala Ser Val Lys Gln
                        215
                                            220
Glu Val Leu Ile Asn Arg Asn Ser Val Leu Phe Ser Ile Thr Leu Lys
                    230
Asp Lys Lys Leu Cys Tyr Asp Gln Gly Ile Ser Gly His His Leu Met
                                    250
Glu Thr Ser Met Thr Val Asn Val Arg Ser Lys Pro Gly Gly Glu Gly
                                                    270
                                265
            260
Lys Arg Leu Ala Phe Asp Ile Thr Tyr Thr Leu Glu Tyr Ser Arg Leu
                            280
                                                285
Lys Asn Lys His Tyr Phe Asp Cys Val Asn Val Asn Pro Glu Met Pro
                        295
Cys Phe Leu Phe Arg Asp Ser Val Tyr Val Leu Leu Val Val Gly Gly
                                        315
                    310
305
Gly Pro Thr Leu Asp Ser Leu Lys Asp Tyr Ser Glu Asp Glu Ile Tyr
                325
                                    330 -
Arg Phe Asn Ser Pro Leu Asp Lys Thr Asn Ser Leu Ile Trp Thr Thr
                              . 345
                                                     350
            340
Arg Thr Thr Arg Thr Thr Lys Asp Ser Ala Phe His Ile Met Ser His
                            360
Glu Ser Pro Gly Ile Glu Trp Leu Cys Leu Glu Asn Ala Pro Cys Tyr
                                             380
                         375
Asp Asn Val Pro Gln Gly Ile Phe Ala Pro Glu Phe Phe Lys Val
                                         395
                    390
Leu Val Ser Asn Arg
                405
 <210> 4459
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 aaggcaacac cgagggaggc ccagcaccac agtccatggc agacacatgg ttcagacttg
 geogattgat ctaagaaact ttattgetea gaacetteee teeetgggea atggaaagag
 180
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 gtgtggcaca tttggtccat tgtcatgtgt gggtatggca ggaggagggg gtaatctaga
 agececacat etagggeett etagggaeee agatatgeee eettaggeaa ggeteacatg
 ccaaagcaaa gcagatgagg tcagcctggc ttgggttgag ggctcagtgc ctcttagcct
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 aggtggtgat acaaacaatg cagaaatcat agagcacgaa gaacaggatc caggccaggt
 540
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 Gly Lys Glu Arg Ala Ala Pro Ser Gln Gly Ser Pro Arg Cys Cys Pro
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 Ser Arg Gly Arg Ala Ala Asn Gly Arg Ala Pro Pro Gly Pro Leu Thr
                                         75
                     70
 Arg Arg Leu Ala Gly Arg Ala Arg Thr Pro Arg Pro Lys Trp Leu Phe
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Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe Arg Gly Ala Val Ala Ile
Val Thr Glu Thr Glu Glu Val Gly Cys Pro Ala Leu Leu Pro Ile Pro
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 420
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         35
 Val Ser Arg Ile Tyr Ala Asp Pro Thr Lys Arg Leu Glu Leu Tyr Phe
 Arg Pro Lys Asp Pro Tyr Cys His Pro Val Cys Ala Asn Arg Phe Ser
                                          75
                     70
 Thr Ser Ser Leu Leu Leu Arg Ile Arg Lys Arg Thr Arg Arg Gln Lys
                                     90
 Gly Val Leu Gly Thr Glu Ala His Ser Glu Val Thr Phe Asp Met Glu
                                 105
             100
 Ile Leu Gly Ile Ile Ser Thr Ile Tyr Lys Phe Gln Gly Met Ser Asp
                             120
 Phe Gln Tyr Leu Ala Val His Thr Glu Ala Gly Gly Lys His Thr Ser
                         135
 Met Tyr Asp Lys Val Leu Met Leu Arg Pro Glu Lys Glu Ala Phe Phe
                     150
 His Gln Glu Leu Pro Leu Tyr Ile Pro Pro Pro Ile Phe Ser Arg Leu
                                      170
 Asp Ala Pro Val Asp Tyr Phe Tyr Arg Pro Glu Thr Gln His Arg Glu
                                  185
  Gly Tyr Asn Asn Pro Pro Ile Ser Gly Glu Asn Leu Ile Gly Leu Ser
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200
Arg Ala Arg Arg Pro His Asn Ala Ile Phe Val Asn Phe Glu Asp Glu
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Glu Val Pro Lys Gln Pro Leu Glu Ala Ala Ala Gln Thr Trp Arg Arg
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Val Cys Thr Asn Pro Val Asp Arg Lys Val Glu Glu Glu Leu Arg Lys
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Leu Phe Asp Ile Arg Pro Ile Trp Ser Arg Asn Ala Val Lys Ala Asn
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Ile Ser Val His Pro Asp Lys Leu Lys Val Leu Leu Pro Phe Ile Ala
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Tyr Tyr Met Ile Thr Gly Pro Trp Arg Ser Leu Trp Ile Arg Phe Gly
                                            300
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Tyr Asp Pro Arg Lys Asn Pro Asp Ala Lys Ile Tyr Gln Val Leu Asp
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                                      315
Phe Arg Ile Arg Cys Gly Met Lys His Gly Tyr Ala Pro Ser Asp Leu
                                    330
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Pro Val Lys Ala Lys Arg Ser Thr Tyr Asn Tyr Ser Leu Pro Ile Thr
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            340
Val Lys Lys Thr Ser Ser Gln Leu Val Thr Met His Asp Leu Lys Gln
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                            360
       355
Gly Leu Gly Arg Ser Gly Thr Ser Gly Ala Arg Lys Pro Ala Ser Ser
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                       375
Lys Tyr Lys Leu Lys Asp Ser Val Tyr Ile Phe Arg Glu Gly Ala Leu
                                        395
                    390
Pro Pro Tyr Arg Gln Met Phe Tyr Gln Leu Cys Asp Leu Asn Val Glu
                                   410
                405
Glu Leu Gln Lys Ile Ile His Arg Asn Asp Gly Ala Glu Asn Ser Cys
                                425
            420
Thr Glu Arg Asp Gly Trp Cys Leu Pro Lys Thr Ser Asp Glu Leu Arg
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                            440
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Asp Thr Met Ser Leu Met Ile Arg Gln Thr Ile Arg Ser Lys Arg Pro
                                            460
                        455
Ala Leu Phe Ser Ser Ser Ala Lys Ala Asp Gly Gly Lys Glu Gln Leu
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                    470
 Thr Tyr Glu Ser Gly Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu
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420
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  Asp Thr Ile Gly Gln Met Arg Arg Xaa Ala Val Gly Leu Val Asp Ala
  Val Lys Ala Thr Asp Gln Tyr Cys Ala Arg Leu Arg Gln Ala Gly Ser
  Ala Ala Pro Arg Pro Pro Arg Ala Gln Gln Pro Gln Pro Ser Gln
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<213> Homo sapiens

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 Phe Gly Glu Gly Leu Leu Glu Ala Glu Leu Ala Ala Leu Cys Pro Thr
 Thr Leu Ala Pro Tyr Tyr Leu Arg Ala Pro Ser Val Ala Leu Pro Val
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 Ala Gln Val Pro Thr Asp Pro Gly His Phe Ser Val Leu Leu Asp Val
 Lys His Phe Ser Pro Glu Glu Ile Ala Val Lys Val Val Gly Glu His
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 Val Glu Val His Ala Arg His Glu Glu Arg Pro Asp Glu His Gly Phe
                                  105
 Val Ala Arg Glu Phe His Arg Arg Tyr Arg Leu Pro Pro Gly Val Asp
                             120
         115
 Pro Ala Ala Val Thr Ser Ala Leu Ser Pro Glu Gly Val Leu Ser Ile
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 Gln Ala Ala Pro Ala Ser Ala Gln Ala Pro Pro Pro Ala Ala Ala Lys
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  Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val Trp Lys
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Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu Asn Gly
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                85
Lys Gln Met Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp Thr Leu
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Ala Phe Ser Pro Asp Ser Gln His Leu Ala Thr Gly Thr His Met Gly
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Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr Ser Leu
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Asp Thr Arg Gly Lys Phe Ile Leu Ser Ile Ala Tyr Ser Pro Asp Gly
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Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile Phe Asp
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Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala Met Pro
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Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val Thr Ala
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                            200
Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Gln His Ala Asn Leu
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Ala Gly Thr Leu Ser Gly His Ala Ser Trp Val Leu Asn Val Ala Phe
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Cys Pro Asp Asp Thr His Phe Val Ser Ser Ser Ser Asp Lys Ser Val
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 Lys Val Trp Asp Val Gly Thr Arg Thr Cys Val His Thr Phe Phe Asp
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His Gln Asp Gln Val Trp Gly Val Lys Tyr Asn Gly Asn Gly Ser Lys
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Gly His Thr Glu Gly Ser Val Ala Leu His Gly Ser Pro Ala Ser Arg
Gln Thr Ser Gln Arg Trp Thr Val Cys Gln Gly Trp Asp Trp Asn Ser
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Trp Glu Gly Asn Met Lys Glu Glu Asn Asn Glu Ser Lys Ser Thr
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Ser Ile Pro Gly His Phe Ile His Phe Gln Asp Tyr Cys Ala Pro Ile
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Ser Thr Leu Met Val Cys Val Asp Thr Ala Gln Gly Cys Ile Ser Leu
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Glu Met Ser Ser Thr Ser Ser Lys Arg Ala Pro Thr Thr Ala Thr Gln
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Arg Leu Lys Gln Asp Tyr Leu Arg Ile Lys Lys Asp Pro Val Pro Tyr
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Ile Cys Ala Glu Pro Leu Pro Ser Asn Ile Leu Glu Trp His Tyr Val
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 Val Arg Gly Pro Glu Met Thr Pro Tyr Glu Gly Gly Tyr Tyr His Gly
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 Lys Leu Ile Phe Pro Arg Glu Phe Pro Phe Lys Pro Pro Ser Ile Tyr
                             120
 Met Ile Thr Pro Asn Gly Arg Phe Lys Cys Asn Thr Arg Leu Cys Leu
                                             140
                         135
 Ser Ile Thr Asp Phe His Pro Asp Thr Trp Asn Pro Ala Trp Ser Val
                                         155
                     150
 Ser Thr Ile Leu Thr Gly Leu Leu Ser Phe Met Val Glu Lys Gly Pro
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 Thr Leu Gly Ser Ile Glu Thr Ser Asp Phe Thr Lys Arg Gln Leu Ala
                                 185
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 Val Gln Ser Leu Ala Phe Asn Leu Lys Asp Lys Val Phe Cys Glu Leu
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                             200
 Phe Pro Glu Val Val Glu Glu Ile Lys Gln Lys Gln Lys Ala Gln Asp
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 Glu Leu Ser Ser Arg Pro Gln Thr Leu Pro Leu Pro Asp Val Val Pro
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 Asp Gly Glu Thr His Leu Val Gln Asn Gly Ile Gln Leu Leu Asn Gly
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 His Ala Pro Gly Ala Val Pro Asn Leu Ala Gly Leu Gln Gln Ala Asn
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 Arg His His Gly Leu Leu Gly Gly Ala Leu Ala Asn Leu Phe Val Ile
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                             40
 Ser Arg Thr Pro Asp Phe Trp Gly Val Pro Asp Ser Arg Gly Gly Pro
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                         55
     50
 Arg Ala Gly Leu Gly His Val Gln Ser Leu Ile Asp Leu Cys Pro Phe
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 Leu Pro Leu Pro Leu Cys Ala Ser Leu Asp Ser Pro Arg Glu Phe Ser
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Glu Glu Val Ile Val Val Thr Thr Arg Asp Val Gln Lys Ala Leu Cys
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 Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile Val Cys Ile Pro Asp
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 Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg Tyr Ile Tyr Pro Lys
 Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp Leu Ile Thr Asp Val
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 Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile Glu Pro Val Pro Gly
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 Gln Lys Gly Lys Lys Ala Val Glu Gln Arg Asp Phe Ile Gly Val
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 Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu Gln Lys His Pro Arg
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 Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly Ser Ile Thr Ser Ile
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 Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys Gln Phe Ser Ser Ala
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  Arg Trp Glu Asp Leu Ser Arg Ser Gln Val Arg Cys Tyr Val His Ile
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Gly Val Asp Ser Leu Ile Gly Pro Glu Thr Gln Ile Gly Glu Lys Ser
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Val Thr Ile Thr Asn Cys Leu Leu Met Asn Ser Val Thr Val Glu Glu
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Gly Ser Asn Ile Gln Gly Ser Val Ile Cys Asn Asn Ala Val Ile Glu
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Lys Gly Ala Asp Ile Lys Asp Cys Leu Ile Gly Ser Gly Gln Arg Ile
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Pro Gln Ala Val Pro His Leu Ile Pro Lys Val Ser Ser Asn Glu Val
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Thr Glu Lys Thr Pro Lys Cys Arg Val Cys Asp Thr Ala Gln Ser Ser
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Leu Leu Ala Cys Gly Asp Val Glu Gly Lys Phe Asp Ile Leu Phe Asn
Arg Val Gln Ala Ile Gln Lys Lys Ser Gly Asn Phe Asp Leu Leu
Cys Val Gly Asn Phe Phe Gly Ser Thr Gln Asp Ala Glu Trp Glu Glu
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<213> Homo sapiens

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  Asn Glu Phe Arg Pro Leu Asp Glu Arg Ile Asp Glu Phe His Pro Lys
  Ala Thr Arg Thr Leu Phe Ile Gly Asn Leu Glu Lys Thr Thr Thr Tyr
              20
  His Asp Leu Arg Asn Ile Phe Gln Arg Phe Gly Glu Ile Val Asp Ile
                          55
  Asp Ile Lys Lys Val Asn Gly Val Pro Gln Tyr Ala Phe Leu Gln Tyr
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Cys Asp Ile Ala Ser Val Cys Lys Ala Ile Lys Lys Met Asp Gly Glu
Tyr Leu Gly Asn Asn Arg Leu Lys Leu Gly Phe Gly Lys Ser Met Pro
                               105
Thr Asn Cys Val Trp Leu Asp Gly Leu Ser Ser Asn Val Ser Asp Gln
                                               125
                           120
Tyr Leu Thr Arg His Phe Cys Arg Tyr Gly Pro Val Val Lys Val Val
                      135
Phe Asp Arg Leu Lys Gly Met Ala Leu Val Leu Tyr Asn Glu Ile Glu
                                       155
               150
Tyr Ala Gln Ala Ala Val Lys Glu Thr Lys Gly Arg Lys Ile Gly Gly
                165
Asn Lys Ile Lys Val Asp Phe Ala Asn Arg Glu Ser Gln Leu Ala Phe
                               185
Tyr His Cys Met Glu Lys Ser Gly Gln Asp Ile Arg Asp Phe Tyr Glu
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Met Leu Ala Glu Arg Arg Glu Glu Arg Arg Ala Ser Tyr Asp Tyr Asn
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Gln Asp Arg Thr Tyr Tyr Glu Ser Val Arg Thr Pro Gly Thr Tyr Pro
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Glu Asp Ser Arg Arg Asp Tyr Pro Ala Arg Gly Arg Glu Phe Tyr Ser
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Glu Trp Glu Thr Tyr Gln Gly Asp Tyr Tyr Glu Ser Arg Tyr Tyr Asp
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Asp Pro Arg Glu Tyr Arg Asp Tyr Arg Asn Asp Pro Tyr Glu Gln Asp
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Ile Arg Glu Tyr Ser Tyr Arg Gln Arg Glu Arg Glu Arg Glu
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Arg Phe Glu Ser Asp Arg Asp Arg Asp His Glu Arg Arg Pro Ile Glu
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Arg Ser Gln Ser Pro Val His Leu Arg Arg Pro Gln Ser Pro Gly Ala
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 Tyr Ser Arg Ser Ser Asp Arg Ser Gly Ser Cys Ser Ser Leu Ser Pro
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 Pro Arg Tyr Glu Lys Leu Asp Lys Ser Arg Leu Glu Arg Tyr Thr Lys
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 Asn Glu Lys Thr Asp Lys Glu Arg Thr Phe Asp Pro Glu Arg Val Glu
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 Arg Glu Arg Arg Leu Ile Arg Lys Glu Lys Val Glu Lys Asp Lys Thr
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 Asp Lys Gln Lys Arg Lys Gly Lys Val His Ser Pro Ser Ser Gln Ser
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 Arg Ser Cys Asn Lys Leu Ser Arg Glu Lys Ala Asp Lys Glu Gly Ile
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 Ala Lys Asn Arg Leu Glu Leu Met Pro Cys Val Val Leu Thr Arg Val
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 Lys Glu Lys Glu Gly Lys Val Ile Asp His Thr Pro Val Glu Lys Leu
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 Lys Ala Lys Leu Asp Asn Asp Thr Val Lys Ser Ser Ala Leu Asp Gln
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Leu Glu Ser Val Arg Met Lys Val Pro Lys Glu Lys Gly Leu Ser Ser
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His Val Glu Val Val Glu Lys Glu Gly Arg Leu Lys Ala Arg Lys His
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Leu Lys Pro Glu Gln Pro Ala Asp Gly Val Ser Ala Val Asp Leu Glu
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Lys Leu Glu Ala Arg Lys Arg Arg Phe Ala Asp Ser Asn Leu Lys Ala
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Glu Lys Gln Lys Pro Glu Val Lys Lys Ser Ser Pro Glu Met Glu Asp
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Ala Arg Val Leu Ser Lys Lys Gln Pro Asp Val Ser Ser Arg Glu Val
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                                      635
Ile Leu Lys Arg Glu Ser Lys Lys Ile Lys Leu Asp Arg Leu Asn Thr
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               645
Val Ala Ser Pro Lys Asp Cys Gln Glu Leu Ala Ser Ile Ser Val Gly
                               665
Ser Gly Ser Arg Pro Ser Ser Asp Leu Gln Ala Arg Leu Gly Glu Leu
                           680
Ala Gly Glu Ser Val Glu Asn Gln Glu Val Gln Ser Lys Lys Pro Ile
                       695
Pro Ser Lys Pro Gln Leu Lys Gln Leu Gln Val Leu Asp Asp Gln Gly
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 Pro Glu Arg Glu Asp Val Arg Lys Asn Tyr Cys Ser Leu Arg Asp Glu
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 Thr Pro Glu Arg Lys Ser Gly Gln Glu Lys Ser His Ser Val Asn Thr
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 Glu Glu Lys Ile Gly Ile Asp Ile Asp His Thr Gln Ser Tyr Arg Lys
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 Gln Met Glu Gln Ser Arg Arg Lys Gln Gln Met Glu Met Glu Ile Ala
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 Lys Ser Glu Lys Phe Gly Ser Pro Lys Lys Asp Val Asp Glu Tyr Glu
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 Arg Arg Ser Leu Val His Glu Val Gly Lys Pro Pro Gln Asp Val Thr
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 Asp Asp Ser Pro Pro Ser Lys Lys Lys Arg Met Asp His Val Asp Phe
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 Asp Ile Cys Thr Lys Arg Glu Arg Asn Tyr Arg Ser Ser Arg Gln Ile
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 Ser Phe His Glu Asp Glu Asp Pro Ile Gly Ser Pro Arg Leu Leu Ser
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                    870
 Val Lys Gly Ser Pro Lys Val Asp Glu Lys Val Leu Pro Tyr Ser Asn
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 Ile Thr Val Arg Glu Glu Ser Leu Lys Phe Asn Pro Tyr Asp Ser Ser
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  Arg Arg Glu Gln Met Ala Asp Met Ala Lys Ile Lys Leu Ser Val Leu
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  Asn Ser Glu Asp Glu Leu Asn Arg Trp Asp Ser Gln Met Lys Gln Asp
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Glu	Asn	Trp	Ser	Phe	Leu	Asp	Trp	Asp	Ser	Arg	Pne	Ald	ASII	LIIC	Arg
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Pro	o Ala	a Gl	y Va	1 Gl	u Gl	u Gl	y Se	r Se	r Gl	y As	b GT	n Pr	o PI	OIY	r Leu
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Gl	n LV	s Se	r Gl	u Gl	u Al	a As	n Gl	u Pr	o Ly	'S AL	a GI	u Ly	3 PL	U AS	p Ala

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Gly	Glu	Ala	Gln 1460	Lys	Leu	Leu	Glu	Leu 1469	Lys	Met	Glu	Ala	Glu 1470	Lys )	Ile
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		1479					1480	)				1485	•		
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Tyr	Ala	Thr	Met	Gly	Asp	His	Glu	Asn	Arg	Ser	Pro	Val	Lys	Glu	Pro
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Ala	Pro	Glu	Lys	Asn	Ser	Lys	Ser	Lys	Arg	GLY	Arg	ser	Arg	ASII	Ser
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				168	5				169	10				TOD	
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D-0-0				) Aen	17al	Ser	Ala	Ser	Glv	Pro	Ser	Pro	Glu	Ala	Thr
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174	5		_	<b>~</b> 3	1/3	~1		C1.	. Glr			Glu	His	Ile	Ala
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Lys	. Leu	ı Ala			Ser	Ala	Ser	Ala	Ala		Lys	Ala	Asp	Ala	Pro
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Gln	Thr	Asp	Leu	Gln 1845	Pro		Ala	Gly	Ala 1850		Ala	Leu	Gln	Pro 1855	Ser
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PIO	АТА	211		110	vob		212					212	5		
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Ser	Lys	Gly	Pro	Gln	Ala	Pro	Ala	Gly	Tyr	Ala	Asn	Val	Ala	Thr	His
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Ser	Ser	Val	Lys	Ala	Asp	Arg	Pro	Ser	Leu	Glu	Lys	Pro	Glu	Pro	Ile
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His	Leu	Ser	Val	Ser	Thr	Pro	Val	Thr	Gln	Gly	Gly	Thr	Val	Lys	Val
		251					252					252	5		
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vaı	Thr	Leu	гуя	256		1111	בעם	141	257	0				257	5
_	-1	•	m1			uic	Pro	Pro			Pro	Ser	Lvs		Pro
Ser	Thr	Leu			HIS	urs	PIU	258	c TTG	LCu	110	561	259	n	
		<b>.</b>	258	0		D	C			C.~~	T10	Dro			λνα
Thr	Glu			His	Val	Pro			PIO	ser	116			vsh	Arg
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Ser	5 Thr			264	Ala 5	Leu			265	Ala 0	Thr			265	Ala

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+1 -	2030	т	car	тЪ				Ala	Leu	His	Ser	Pro	Arq	Ala	Pro
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				2725	,				2730					2735	i
			2740	)				2745	i	Leu			2750	)	
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Dro	val.	Gln	Ser	Glu	Val				Gln	Ser	Glu	Tyr	Arg	Leu	His
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2785	5				2790		_	- •		2795		**- 1	17 7	T	
Thr	Ala	Val	Ser			Pro	Arg	Ala		Asp	GIY	vaı	val	Dys	· VAI
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Dwa	The	Car	Dhe	Dro	Ser	Pro	์ Val	Ser	Val	Ser	Met	Lys	Pro	Asp	Leu
		عد .	F 114	-10	303		- 41			303	5	•		-	3040
302		<b>^</b>		D	202	~1 m	Th~	λla	Dro	Lys		Pro	Leu	Phe	Val
Pro	val	ser	Leu			GTU	. 1111	wid	305	פיעם				305	5
_				304	⊃ 		m	D			T.e.11	Val	Len		
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Thr	Glu			Pro	Ala	Pro	Lys	GIN	Asp	ser	ser	308		nea	Thr
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Ser	· Gln	Aro	rPro	val	Asp	Met	∵va⊥	GID	ьeu	_ьeu	пλя	y =	- y -		- A -

PCT/US00/08621 WO 00/58473

3100

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Pro Pro Gly Val Ala Ala Leu Leu Ala Phe Pro Glu Ala Arg Pro Glu
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Phe His Leu Gln Leu His Trp Ala Ser Pro Leu Glu Thr Leu Leu Asp
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 Ser Arg Ala Gly Arg Pro Pro Gln Leu Val Leu Asp Leu Ser Arg Arg
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Phe	Leu	Ala	Arg	Phe	Leu	Ala	Asn	Thr	Ser	Phe	Gln	Gly	Arg	Thr	GIY
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n.u	001	7124		405					410				•	415	_
_	_				•		<b>~1</b>	TT		Dha	1701	Dhe	7 J =		Δen
Leu	Arg	Val	.Va1	Thr	Leu	Leu	GIU		PIO	Pne	vai	Pne		Arg	АЗР
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Pro	Asp	Glu	Asp	Gly	Gln	Cys	Pro	Ala	Gly	Gln	Leu	Cys	Leu	Asp	Pro
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Or y	450		p			455					460				
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ī.en	Tvr	Leu	Val	Glv	Asp	Glv	Lvs	Tyr	Gly	Ala	Leu	Arg	Asp	Gly	Arg
	- 7		500	1				505	•			_	510	-	
_	<b>-1</b>	<b>~1</b>		17-1	Gly	7	T 033		λ1 -	Gly	) Tra	Δla		Met	Δla
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				645				_	650					655	
•	<b>~</b>	C	m			7.00	T ou	777			Mot	Va1	GIV	Δsn	Lys
Leu	Ser	ser			Ald	ASII	Leu		ALA	vai	Mec	Val		r.op	27.5
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Thr	Phe	Glu	Glu	Leu	Ser	Gly	Ile	His	Asp	Pro	Lys	Leu	His	His	Pro
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_		•	•	A	nt.		N	N4 - 4-	T7	<b>77</b> -		Met	7~~	λ~~	ui c
_	TTE	ьys	ьys	ser		PIO	ASD	Mec	HIS			1.150	ary	Arg	His
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ser	VIG														

PCT/US00/08621 WO 00/58473

730

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PCT/US00/08621 WO 00/58473

410

390

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Lys Val Cys Asp Trp His Lys Glu Leu Tyr Asp Trp Arg Leu Gly Pro
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Trp Asn Gln Cys Gln Pro Val Ile Ser Lys Ser Leu Glu Lys Pro Leu
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 Ile Gln Lys Asp Lys Asp Ile Pro Ala Glu Asp Ile Ile Cys Glu Tyr
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 Cys Gln Ser Ser Pro Cys Glu Ala Glu Glu Leu Arg Tyr Ser Leu His
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 Val Gly Pro Trp Ser Thr Cys Ser Met Pro His Ser Arg Gln Val Arg
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Gly Asn Gln Thr Ala Leu Cys Gly Gly Gly Ile Gln Thr Arg Glu Val
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Tyr Cys Val Gln Ala Asn Glu Asn Leu Leu Ser Gln Leu Ser Thr His
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Lys Ala Val Arg Leu Gly Asp Cys Glu Pro Asp Asn Gly Lys Glu Cys
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Gln Glu Phe Ala Leu Ser Phe Ile Ile Ile Leu Val Tyr Val Leu Asp
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PCT/US00/08621 WO 00/58473

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Glu Pro Arg Val Val Ser Thr Glu Val Val Arg Ala Gln Glu Glu Trp
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Glu Ala Val Asp Thr Ile Gln Pro Glu Thr Gly Ser Gln Ala Ser Ser
                         40
Glu Gln Pro Gly Gln Leu Ile Ser Phe Ser Glu Ala Leu Gln His Phe
                      55
Gln Thr Val Asp Leu Ser Pro Phe Lys Lys Arg Ile Gln Pro Thr Ile
                                    75
Arg Arg Thr Gly Leu Ala Ala Leu Arg His Tyr Leu Phe Gly Pro Pro
                                 90
              85
Lys Leu His Gln Arg Leu Arg Glu Glu Arg Asp Leu Val Leu Thr Ile
                             105
Ala Gln Cys Gly Leu Asp Ser Gln Asp Pro Val His Gly Arg Val Leu
                          120
Gln Thr Ile Tyr Lys Lys Leu Thr Gly Ser Lys Phe Asp Cys Ala Leu
                                        140
                      135
His Gly Asn His Trp Glu Asp Leu Gly Phe Gln Gly Ala Asn Pro Ala
                 150
                                     155
Thr Asp Leu Arg Gly Ala Gly Phe Leu Ala Leu Leu His Leu Leu Tyr
                                 170
Leu Val Met Asp Ser Lys Thr Leu Pro Met Ala Gln Glu Ile Phe Arg
                            185
          180
Leu Ser Arg His His Ile Gln Gln Phe Pro Phe Cys Leu Met Ser Val
                         200
      195
Asn Ile Thr His Ile Ala Ile Gln Ala Leu Arg Glu Glu Cys Leu Ser
                      215
                                        220
Arg Glu Cys Asn Arg Gln Gln Lys Val Ile Pro Val Val Asn Ser Phe
                                    235
                 230
Tyr Ala Ala Thr Phe Leu His Leu Ala His Val Trp Arg Thr Gln Arg
                                 250
Lys Thr Ile Ser Asp Ser Gly Phe Val Leu Lys Gly Val Leu Phe Leu
                           265
           260
Leu Gly Arg Pro Arg Leu Asn Ala Gln Cys Pro Arg Ser Arg Glu Pro
                         280
Lys Val Val Ala Arg Leu Val Leu Ala Ala Val Leu Pro His Pro His
                                        300
                     295 ,
Phe Leu Lys Phe Gln Leu Thr Lys Ile Ser Ile Thr His Pro Leu Glu
                                    315
                  310
Ser Ala Ser Ser Pro Phe Ser Ala Leu Thr Val Ala Leu Phe Trp Ser
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               325
Tyr Thr Tyr Asp Lys His Ile Phe
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tetteacetg ggaceetegg ceaggetggg acageateea ggaggegagg etgeatggte
cagcggtggg tgcaggtggc aacaggtcgg cgggctgtgc aggttccaaa aggagctctc
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420
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ageccaggat caegtagaag gagegegtea gegeegagee egaegeeeee ggeggaegeg
tgtgcgtgct gttgtgtggc gcgcccggct ggctcccgtt cgtcacggcc ggcggcggcg
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885
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Cys Arg Asp Met Ala Ala Phe Ile Val Pro Ser Pro Ala Arg Arg Cys
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Ser Gln Lys Gly Ser Leu Gly His Leu Pro Thr Gln Pro Trp Leu Trp
                           40
        35
Ala Ala Met Ser Pro Arg Gly Gln Glu Arg Gly Thr Ser His Ser Gln
                                           60
                       55
Ala Arg Glu Pro Gln Arg Pro Gly Arg Trp Leu Leu Gly Ser Leu Gln
                                       75
                   70
Ser Ser Pro Gly Thr Leu Gly Gln Ala Gly Thr Ala Ser Arg Arg Arg
                                   90
Gly Cys Met Val Gln Arg Trp Val Gln Val Ala Thr Gly Arg Arg Ala
                               105
            100
Val Gln Val Pro Lys Gly Ala Leu Gly Leu Ala Leu Gly Glu Thr Ser
                           120
Pro Gly Ala Ser Arg Gly Met Ser Gly Gly Ala Gly Gly Cys Trp Ala
                                           140
                       135
Leu Gly Trp Ala Pro Ser Pro Val Leu Pro Ser Trp Leu Leu Glu Gly
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150
145
Pro Pro Pro Trp Leu Ser Ile Ile Ser Asp Ser Gly Thr Gln Thr Pro
                                    170
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Ser Pro Arg Arg Cys Pro Ala Arg Pro Ser Pro Trp Gly Pro Gln Cys
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                                185
            180
Trp Arg Gly Gly Arg Ile Ala Ser Ala Glu Ala Ser Ser Thr
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aagatggagg agaaaccctc agggcccatc ccggacatgc tggccactgc agagcccagc
tccagtgaga ccgacaagga ggtgttgtcc ccggctgtgc cagctgcage cccctcctcc
tecatgtegg aggagecagg ecetgageag geagecaeae egecagtggg gaacgtggag
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gacceagece tggcetgace ageatagtet eeggaceag egaggacetg eggeeteeca
gacgacgccc acetecaggg aagcaaatec ettgetecag eeetggetge tgeeteagtt
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 Met Glu Glu Lys Pro Ser Gly Pro Ile Pro Asp Met Leu Ala Thr Ala
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 Glu Pro Ser Ser Ser Glu Thr Asp Lys Glu Val Leu Ser Pro Ala Val
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 Pro Ala Ala Ala Pro Ser Ser Ser Met Ser Glu Glu Pro Gly Pro Glu
                             40
 Gln Ala Ala Thr Pro Pro Val Gly Asn Val Glu Gly Leu Glu Gly Cys
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                                             60
 Ser Arg Ala Pro Pro Gln Pro Gln Thr Ala Ala Ser Leu Ala Pro Asp
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 Pro Ala Leu Ala
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<211> 1414
<212> DNA
<213> Homo sapiens
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gtgagcctgg ccaacttaaa gccgaatccc ggctccaaga aaccggagag aagaccaaga
ggtcggagaa gaggtagaaa atgtggcaga ggccataaag gagaaaggca aagaggaacc
cggccccgct tgggctttga gggaggccag actccatttt acatccgaat cccaaaatac
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cagtatetta ttgatttggg tegtgttgat eetagteaac etattgaett aacecagett
gtcaatggga gaggtgtgac catccagcca cttaaaaggg attatggtgt ccagctggtt
gaggagggtg ctgacacctt tacggcaaaa gttaatattg aagtacagtt ggcttcagaa
ctagctattg ctgccattga aaaaaatggt ggtgttgtta ctacagcctt ctatgatcca
agaagtotgg acattgtatg caaacotgtt coattettte ttegtggaca accoattoca
aaaagaatgc ttccaccaga agaactggta ccatattaca ctgatgcaaa gaaccgtggg
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tatatettae etgatateae taaagatgaa etetteaaaa tgetetgtae taggaaggat
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atcctaaaac ctacagatga aaatctcctt aagtattata cctcatgaat tcccgtccaa
ggaagcagag ttgttaaaga gtactggaat aggggctgaa ggatctatat tcccttattg
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tcattttcat ctaaaattaa atggcaggaa acaaggactg catagagaaa ctgagtctgt
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 1414
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<210> 4532
<211> 296
<212> PRT
<213> Homo sapiens
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Arg Gly Leu Pro Arg Val Ser Leu Ala Asn Leu Lys Pro Asn Pro Gly
                             25
Ser Lys Lys Pro Glu Arg Arg Pro Arg Gly Arg Arg Arg Gly Arg Lys
Cys Gly Arg Gly His Lys Gly Glu Arg Gln Arg Gly Thr Arg Pro Arg
                                       60
                     55
Leu Gly Phe Glu Gly Gly Gln Thr Pro Phe Tyr Ile Arg Ile Pro Lys
                                    75
                 70
Tyr Gly Phe Asn Glu Gly His Ser Phe Arg Arg Gln Tyr Lys Pro Leu
                                90
             85
Ser Leu Asn Arg Leu Gln Tyr Leu Ile Asp Leu Gly Arg Val Asp Pro
                            105
    . 100
Ser Gln Pro Ile Asp Leu Thr Gln Leu Val Asn Gly Arg Gly Val Thr
                         120
                                           125
Ile Gln Pro Leu Lys Arg Asp Tyr Gly Val Gln Leu Val Glu Glu Gly
        135
Ala Asp Thr Phe Thr Ala Lys Val Asn Ile Glu Val Gln Leu Ala Ser
                                   155
               150
Glu Leu Ala Ile Ala Ile Glu Lys Asn Gly Gly Val Val Thr Thr
              165
                                170
Ala Phe Tyr Asp Pro Arg Ser Leu Asp Ile Val Cys Lys Pro Val Pro
          180
                             185
Phe Phe Leu Arg Gly Gln Pro Ile Pro Lys Arg Met Leu Pro Pro Glu
                                           205
                         200
Glu Leu Val Pro Tyr Tyr Thr Asp Ala Lys Asn Arg Gly Tyr Leu Ala
                                        220
                     215
Asp Pro Ala Lys Phe Pro Glu Ala Arg Leu Glu Leu Ala Arg Lys Tyr
                  230 235
Gly Tyr Ile Leu Pro Asp Ile Thr Lys Asp Glu Leu Phe Lys Met Leu
                                 250
               245
Cys Thr Arg Lys Asp Pro Arg Gln Ile Phe Phe Gly Leu Ala Pro Gly
                                  . 270
           260 265
Trp Val Val Asn Met Ala Asp Lys Lys Ile Leu Lys Pro Thr Asp Glu
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Asn Leu Leu Lys Tyr Tyr Thr Ser
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 <210> 4533
 <211> 968
 <212> DNA
 <213> Homo sapiens
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tttgcacacg tgtgcccctg tccggacgcc ggggctgagg ccgatcgcgt cgggcagcgg
120
gegeggegge ceegegeage catggaetgg eteatgggga agtecaaage caageecaat
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aggatcaccg acttccagtt caaggagctg gtggtgctgc cccgggagat cgacctcaac
300
gagtggctgg ccagcaacac aacaacattt ttccaccaca tcaacctgca gtatagcaca
atctcggagt tctgcacagg agagacgtgt cagacgatgg ccgtgtgcaa cacacagtac
tactggtatg acgagegggg gaagaaggtc aagtgcacgg ccccacagta cgttgacttc
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gtgctggcac acatctactg ggcccacttc aaggagacgc tggccctgga gctgcacgga
cacttgaaca cgctctacgt ccacttcatc ctctttgctc gggagttcaa cctgctggac
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gtccacagtg ggggcagtgg ggatggggcc ggcagcgggg gcccggggagc acagaaccac
gtgaaggaga gatgagcccc ccgggccgga caggggcaca cgtgtgcaaa gagacggtgg
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His His Arg Leu Phe Ala His Val Cys Pro Cys Pro Asp Ala Gly Ala
 Glu Ala Asp Arg Val Gly Gln Arg Ala Arg Arg Pro Arg Ala Ala Met
 Asp Trp Leu Met Gly Lys Ser Lys Ala Lys Pro Asn Gly Lys Lys Pro
 Ala Ala Glu Glu Arg Lys Ala Tyr Leu Glu Pro Glu His Thr Lys Ala
                                         75
 Arg Ile Thr Asp Phe Gln Phe Lys Glu Leu Val Val Leu Pro Arg Glu
                                     90
 Ile Asp Leu Asn Glu Trp Leu Ala Ser Asn Thr Thr Thr Phe Phe His
                                 105
 His Ile Asn Leu Gln Tyr Ser Thr Ile Ser Glu Phe Cys Thr Gly Glu
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120
Thr Cys Gln Thr Met Ala Val Cys Asn Thr Gln Tyr Tyr Trp Tyr Asp
                       135
                                            140
Glu Arg Gly Lys Lys Val Lys Cys Thr Ala Pro Gln Tyr Val Asp Phe
                                       155
                    150
Val Met Ser Ser Val Gln Lys Leu Val Thr Asp Glu Asp Val Phe Pro
                                    170
                165
Thr Lys Tyr Gly Arg Glu Phe Pro Ser Ser Phe Glu Ser Leu Val Arg
                                185
            180
Lys Ile Cys Arg His Leu Phe His Val Leu Ala His Ile Tyr Trp Ala
                            200
        195
His Phe Lys Glu Thr Leu Ala Leu Glu Leu His Gly His Leu Asn Thr
                        215
Leu Tyr Val His Phe Ile Leu Phe Ala Arg Glu Phe Asn Leu Leu Asp
                                        235
                    230
Pro Lys Glu Thr Ala Ile Met Asp Asp Leu Thr Glu Val Leu Cys Ser
                245
                                    250
Gly Ala Gly Gly Val His Ser Gly Gly Ser Gly Asp Gly Ala Gly Ser
                                265
            260
Gly Gly Pro Gly Ala Gln Asn His Val Lys Glu Arg
                            280
        275
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<211> 473
<212> DNA
<213> Homo sapiens
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ctcagcctcc cgagtagctg ggattacagg cgtccgccac cacgcccggc taatttttgt
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atgatecate egeettggee teccaaagtg etgggattae aggeatgage tacegegeee
ggcettgget gcagattaac gggaatacet ceettggget teetaggtga caetgtgata
360
ttoggtatga cotocottgo totattoott ggaagaagta caggcactgg toaagagtgo
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<210> 4536
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<212> PRT
<213> Homo sapiens
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Gln Ala Gly Val Gln Trp His Asp His Ser Ser Leu Gln Pro Leu Pro
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25
                                                    30
            20
Pro Arg Phe Lys Gln Phe Ser Xaa Leu Ser Leu Pro Ser Ser Trp Asp
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Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe Cys Ile Phe Ser Arg
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Asn Gly Val Ser Pro Ser Arg Pro Gly Trp Ser
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<210> 4537
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<212> DNA
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ataaaacgtt ctgaactacc tctgcgaggt gacattgtct tctttcttca gaaggttcat
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ggactgagtc aagatgagga ggacceteeg etgeeeeega egeeeatgaa eagettggtg
1200
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1260
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1440
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2811
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<212> PRT
<213> Homo sapiens
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Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro Leu
                          40
Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu Ser
                                          60
                      55
Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln Ala
                                     75 -
                  70
Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser
                                 90
              85
Asp Thr Ala Leu Glu Glu Xaa Ser Ser Arg Gly Ala Arg Pro Ser Thr
                              105
His Arg Ala Glu Thr Leu Pro Ser Leu Xaa His Val Ser Val Glu Leu
                          120
Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
                                          140
                      135
Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
                                     155
                  150
Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
                      170
               165
Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
                             185
Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
                          200
       195
Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
                       215
                                         220
Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
                   230
Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
                                   250
Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
                               265
           260
Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
                           280
His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
                       295
Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
                  310
                                      315
His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Leu Leu
                                  330
           325
Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
                               345
           340
Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
                           360
Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln
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375
    370
Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
                                    395
                    390
Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
                                    410
               405
Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
                                425
            420
Ser Leu Ser Lys Lys
        435
<210> 4539
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<212> DNA
<213> Homo sapiens
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tcacctggaa actccagcaa gagcagaggc aggtggagga gctgaggatg cagcttcaga
agcagaaaag gaataactgt tcagagaaga agccgctgcc tttcctggct gcctccatca
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Lys Leu Gln Gln Glu Gln Arg Gln Val Glu Glu Leu Arg Met Gln Leu
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Gln Lys Gln Lys Arg Asn Asn Cys Ser Glu Lys Lys Pro Leu Pro Phe
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Gly Tyr Val Ser Leu Gln Glu Lys Asp Ile Phe Val Ser Gly Val Lys
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Ile Phe Tyr Gly Ser Gln Thr Gly Thr Ala Lys Gly Phe Ala Thr Val
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Ile Thr Ser Asn Arg Leu Gly Arg Ala Pro Val Glu Ser Pro Val Pro
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Ser His Phe Arg Arg Val Ala Leu Leu Pro Arg Ser Arg Ser Gln Trp
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Pro Asp Lys Gln Ser His Ser Gly Val Val Arg Pro Gly Arg Val Ser
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Pro Val Gly Gly Arg Gly Ala Leu Ala Arg Arg Val Ser Gly Glu Ala
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Lys Cys Lys Ala Leu Val Arg Gly Ala Ser Gly Ser His Gly Gly Ala
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Ala Leu Val Ser Thr Gly
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Ser Thr Gly Ala Ile Leu Ala Phe Met Leu Gly Leu Phe His Met Pro
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 Phe Tyr Asp Ser Gln Thr Trp Glu Asn Ile Leu Lys Asp Arg Met Gly
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2820					

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Tyr Val Glu Thr Val Asp Ile Asp Gly Glu Thr Asn Leu Lys Phe Arg
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Gln Ala Leu Met Val Thr His Lys Glu Leu Ala Thr Ile Lys Lys Met
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Ala Ser Phe Gln Gly Thr Val Thr Cys Glu Ala Pro Asn Ser Arg Met
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His His Phe Val Gly Cys Leu Glu Trp Asn Asp Lys Lys Tyr Ser Leu
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Asp Ile Gly Asn Leu Leu Leu Arg Gly Cys Arg Ile Arg Asn Thr Asp
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Thr Cys Tyr Gly Leu Val Ile Tyr Ala Asp Gly Tyr Met Phe Val Gly
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Phe Asp Thr Lys Ile Met Lys Asn Cys Gly Lys Ile His Leu Lys Arg
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Thr Lys Leu Asp Leu Leu Met Asn Lys Leu Val Val Val Ile Phe Ile
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Ser Val Val Leu Val Cys Leu Val Leu Ala Phe Gly Phe Gly Phe Ser
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Val Lys Glu Phe Lys Asp His His Tyr Tyr Leu Ser Gly Val His Gly
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Ser Ser Val Ala Ala Glu Ser Phe Phe Val Phe Trp Ser Phe Leu Ile
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Leu Leu Ser Val Thr Ile Pro Met Ser Met Phe Ile Leu Ser Glu Phe
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Ile Tyr Leu Gly Asn Ser Val Phe Ile Asp Trp Asp Val Gln Met Tyr
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Tyr Lys Pro Gln Asp Val Pro Ala Lys Ala Arg Ser Thr Ser Leu Asn
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Asp His Leu Gly Gln Val Glu Tyr Ile Phe Ser Asp Lys Thr Gly Thr
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Leu Thr Gln Asn Ile Leu Thr Phe Asn Lys Cys Cys Ile Ser Gly Arg
 Val Tyr Gly Glu Pro Leu Pro Leu Glu Gln Val Arg Arg Arg Glu Ala
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Ala Leu Pro Gln Cys Gly Pro Ala Ala Pro Arg Ala Asp Gln Arg Gly
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                                        315
Arg Gly Arg Ala Gly Val Leu Ala Pro Ala Gly His Leu Pro His Gly
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                                     330
 Asp Asp Gln Leu Leu Tyr Gln Ala Ala Ser Pro Asp Glu Gly Ala Leu
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Thr	Val	Ile	Phe	Glu	Arg	Leu	His	Arg	Arg	Gly	Ala	Met	Glu	Pne	ALA
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Thr	Glu	Glu	Ala	Leu	Ala	Ala		Ala	Gln	GIU	Thr	Leu	Arg	THE	Leu
		435			_		440			<b>-1</b> -		445	7 02	Trn	Gln
Cys	Leu	Ala	Tyr	Arg	Glu		Ala	GIu	Asp	TTE	460	GIU	Asp	Пр	GIII
	450		_		_ •	455	•	T	T	<b>Cl</b> n		λνα	λla	Gln	Ala
Gln	Arg	His	Gln	Glu	Ala	Ser	Leu	Leu	Leu	475	ASII	Arg	AIG	· · · ·	480
465	_			_	470	<b>~</b> 1	140=	C1	Gln		Len	Δνσ	T.em	Leu	
Leu	Gln	Gln	Val		Asn	GIU	Mec	GIU	490	ASP	Beu	9		495	1
_ •	_,		~7	485	Asp	7 ~~	LAU	Gln		Glv	Val	Pro	Glu	Thr	Ile
Ala	Thr	Ala	500		ASP	Arg	Deu	505	пор	0-1			510		
•	<b>a</b>	7	500	Tyc	Ser	Δsn	Tle		Ile	Trp	Val	Leu	Thr	Gly	Asp
rys	Cys	515		Буз	501		520	-1-		•		525		_	
Tue	Gla	213	Thr	Δla	Val	Asn	Ile	Gly	Phe	Ala	Cys	Glu	Leu	Leu	Ser
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Glu	Δen	Met	Leu	Ile	Leu	Glu	Glu	Lys	Glu	Ile	Ser	Arg	Ile	Leu	Glu
EAC					550					555					200
Thr	Tvr	Trp	Glu	Asn	Ser	Asn	Asn	Leu	Leu	Thr	Arg	Glu	Ser	Leu	Ser
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Gln	Val	Lys	Leu	Ala	Leu	Val	Ile	Asn	Gly	Asp	Phe	Leu	Asp	Lys	Leu
			580	)				585					590		
Leu	Val	Ser	Leu	Arg	Lys	Glu			Ala	Leu	Ala	GIn	Asn	vaı	Asn
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Met	Asp	Glu	ı Ala	Trp	Gln			Gly	Gln	Ser	Arg	Arg	. Asp	Pne	Leu
	610	)				615	_			. 1	620		Lou	Dro	T. <del>2</del> 11
Tyr	Ala	Arg	Arg	, Leu	Ser	Leu	Leu	Cys	Arg	635	FILE	Gry	Deu		Leu 640
625	· -	_	_		630	<b>.</b>		. 7~~	בות י			Ser	Ser	Glu	
Ala	Ala	a Pro	Pro			ASP	) Ser	Arg	650		****			655	Val
_		. ~1.	. 3	645	Phe	. 1751	λer	T.eu			Lvs	Cvs	Gln		
Lev	ı Gli	1 GIL		_	Pile	vai	. Asp	665			-1	-4	670	•	
~1.		- 011	660 200	, , 1751	Thr	Pro					Leu	ı Ile	Val	Ala	Leu
		674	=				680	)				003	)		
17-7	T	- Tare	י בי 17 <i>יצו</i> י	r His	. Glr	. Val	Val	Thr	Lev	ı Ala	Ile	Gly	Asp	Gly	Ala
	601	`				699	5				700	,			
Act	n Asi	n Ile	e Ası	a Met	: Ile	Lvs	Thr	Ala	ASE	Val	. Gl	/ Val	. Gly	Leu	Ala
70'	5				710	)				715	•				120
Gly	v Gl	n Gl	u Gl	y Met	t Glr	a Ala	a Val	l Glr	ı Asr	ı Ser	: As	Phe	val	Leu	Gly
				72	5				730	)				/35	'
Gla	n Ph	e Cy:	s Phe	e Lei	ı Glr	Arg	g Lei	ı Lei	ı Leı	ı Val	L His	Gl ₃	/ Arg	Trp	Ser
			74	0				749	5				/50	,	
Ty:	r Va	l Ar	g Il	e Cys	s Lys	s Phe	e Let	ı Arg	туз	: Phe	e Phe	Ty:	Lys	Ser	Met
		75	5				760	)				/6:	•		
Ala	a Se	r Me	t Me	t Va	l Glr	ı Va	l Trị	Phe	e Ala	a Cys	з Ту	r Ası	ı GIŞ	, Lue	Thr

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770

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Gly Gln Asp Val Ser Ala Glu Gln Ser Leu Glu Lys Pro Glu Leu Tyr
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Val Val Gly Gln Lys Asp Glu Leu Phe Asn Tyr Trp Val Phe Val Gln
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 Ser Ala Ala His Cys Pro Val Pro Gly Ile Ser Glu Gly Pro Arg Thr
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775

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1260

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                               25
Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser
                           40
Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu
Pro Ala Asn Thr Gln Ile Leu Leu Gln Thr Asn Asn Ile Ala Lys
                                       75
                   70
Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu
                                   90
               85
Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met
                               105
           100
Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu
                                               125
                           120
Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile
                                           140
                       135
Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu
                                       155
                   150
His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile
                                   170
Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile
                              185
        180
Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu
                                               205
Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile
                                           220
                        215
Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe
                                        235
                    230
Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val
                                    250
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Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile
                                265
 Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile
                           280
 Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn
                                            300
                        295
 Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser
                                       315
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 Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu
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Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu
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345
Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg
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Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg
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Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln
                                     395
                 390
Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys
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              405
Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu
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Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln
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Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn
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Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile
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                 470
Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr
                                 490
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Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly
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          500
Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp
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                         520
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Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser
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His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn
                                 570
Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile
                             585
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Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr
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Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr
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Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile
                                     635
                630
Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His
                                  650
               645
Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu
                              665
           660
Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser
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Leu Asp Thr Pro Gly Val Leu Ala Pro Arg Ile Glu Ser Val Glu Thr
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 Gly Leu Lys Leu Ala Leu Cys Gly Thr Val Leu Asp His Leu Val Gly
 Glu Glu Thr Met Ala Asp Tyr Leu Leu Tyr Thr Leu Asn Lys His Gln
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 Arg Phe Gly
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Glu Thr Ser Arg Ala Phe Leu Pro Pro Pro Ser Asp Val Arg Val Arg
Ser Cys Leu Tyr His Trp Ser Ala Thr Ala His Leu Pro Pro Leu Ser
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                    70
Lys Lys Pro Pro Cys Thr Ile Ser His Leu Arg Pro Leu Leu Gly Leu
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Pro Pro Pro Ser Asp Leu His Ile Pro Ser Ala Ala Thr Leu Gly Pro
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Cys Met His Trp Pro Pro Pro Ser Asp Ala Pro Cys Thr Ile Ser Leu
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Asp Phe Val Tyr His Tyr Gly
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780
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Gly Asp Leu Val Arg Ala His Pro Pro Leu Glu Glu Arg Ala Arg Leu
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Leu Arg Gly Gln Ser Val Gln Gln Val Gly Pro Gln Gly Leu Leu Tyr
                         40
Val Gln Gln Arg Glu Leu Ala Val Thr Ser Pro Lys Asp Gly Ser Ile
                      55
                                        60
Ser Ile Leu Gly Ser Asp Asp Ala Thr Thr Cys His Ile Val Val Leu
                                    75
                  70
Arg His Thr Gly Asn Gly Ala Thr Cys Leu Thr His Cys Asp Gly Thr
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Asp Thr Lys Ala Glu Val Pro Leu Ile Met Asn Ser Ile Lys Ser Phe
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Ser Asp His Ala Gln Cys Gly Arg
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240
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780		cttcgcagct			
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	tccccgccag	ggcccgaagc	tcctcctcag	acgggtgctt	gtatcggaac
	tacagagcag	ccagcgcgcg	aaggagcagt	gtggcgccag	cctgtgcatg
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Gln Thr Trp His Ile Arg Phe Gly Asp Asn Gly Leu Gly Thr Leu Met
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Leu Leu Gly Pro Gly Glu Thr Val Leu Arg Gln Lys Leu Gly Val Gln
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Gly Gly Pro Arg Val Arg His Cys Gly Glu Gly Asn Ala Gly Glu Ser
                                      75
                   70
Gly Pro Thr Leu Gln Leu Gly Thr Arg Gly Arg Lys Gln Arg Gly Gln
                                   90
Ala Ser Val Pro Leu Pro Gln Glu Gln Thr Ser Gly Pro Gln Glu Gly
                               105
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Leu Gln Ala Ala Arg Ser Leu Pro Ser Ala Gly Gly Ser Arg Gly Arg
                           120
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Lys Gly Trp Arg Ala Ala Gly Arg Gln Pro Ser Thr Arg
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actcagttac acatcacgaa gtcaaatgcc aggggaaacc attagccgga atctacagga
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gacgccaaga aacgggaggc tctgtacgca caggaccctt ccacgggctg ctacatgtac
720
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tattttcagt atctgagcaa aacctactgg tgagtccact gttgcttaga gtggcttttc
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cagtettttg gtttgttgt tgttgaettt ttttttttta ttttttgaga tggagtettg
900
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Lys Thr Gln Gln Asn Arg Lys Leu Thr Asp Phe Tyr Pro Val Arg Arg
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Ser Ser Arg Lys Ser Lys Ala Glu Leu Gln Ser Glu Glu Arg Lys Arg
        35
Ile Asp Glu Leu Ile Glu Ser Gly Lys Glu Glu Gly Met Lys Ile Asp
Leu Ile Asp Gly Lys Gly Arg Gly Val Ile Ala Thr Lys Gln Phe Ser
                    70
Arg Gly Asp Phe Val Val Glu Tyr His Gly Asp Leu Ile Glu Ile Thr
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                85
Asp Ala Lys Lys Arg Glu Ala Leu Tyr Ala Gln Asp Pro Ser Thr Gly
                                105
Cys Tyr Met Tyr Tyr Phe Gln Tyr Leu Ser Lys Thr Tyr Trp
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<212> DNA
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180
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300
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Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg
Ala Gly Ala Val Gly Thr Pro Gly Lys Arg Gly Pro Ser Gly Pro Gln
                                            60
                        55
Gly Leu Leu Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His
                                        75
                    70
Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr
                                    90
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Glu Thr Asn Pro Phe Thr Arg
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ctccccgacc aggtggtcca gcaccgttcc acacagggcc agcttcaggc ctgtctccac
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agagacetga attttggaca teacagetet ggtgateeca ggetegeeae eeaceetggt
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360
gttggggacc ccaatgacca tgatacagta ctccaggttc tcttttcggt ggtagcggtg
420
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720
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gctgggacta caggtgcccg ccaccacacc cacctaattt tcgtattttt agtagagacg
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<211> 107
<212> PRT
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Pro Ala Arg His Val Ala Thr Ala Gln Gly Glu Val Leu Pro Pro Gly
                            40
Gly Leu Gly Gly Ala Ala Gln Arg Ala Arg Gly Gln Ser His Gly Gly
                        55
Thr Val Pro Gly Asn Ala Pro Ala Ala Asp Leu Leu Ala Leu Ser Pro
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Arg Leu Glu Arg Ser Gly Thr Ile Ser Thr His Cys Lys Leu Arg Leu
Pro Gly Ser Arg His Ser Pro Ala Ser Ala Ser
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420
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720		gatgatcagc			
780		tggactacac			
840		cattgacatc			
900		caacactgtg		•	
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## <213> Homo sapiens

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405
Asp Asp Asp Val Ala Asp Gly Leu Ala Phe His Ala Lys Arg Ser Tyr
          420 . 425
Gln Pro His Gly Arg Trp Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys
                         440
Thr Ile Leu Asp Ala Gln Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys
                      455
Pro Glu Ser Leu Glu Asn Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser
                                    475
                  470
Leu Ala Ser Leu Leu Ser Glu Gln Lys Glu Ser Ser Glu Ala Ser Glu
                                 490
Leu Ile Leu Tyr Ser Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp
                             505
           500
Ser Gln Tyr Cys Arg Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln
                          520
Gly Asp Ser Tyr Leu Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser
                                       540
                      535
Pro Pro Glu Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro Glu Gly Pro
                                    555
          550
Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln Glu Lys Phe
                                 570 575
              565
Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys Arg Ala Leu
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          580
Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe Asn Pro Arg
                         600
Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys Ala Ser Arg
                      615
                                        620
Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu Val Lys Ser
625 630
                                  635
Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro Arg Ala Gly
              645 650
Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Ser Val Pro Ser Ala Ser
           660 665
 Val Thr Ala Pro Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser
        675 680
 Ser Val Leu Pro Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro
                                        700
                      695
 Thr Pro Gly Leu Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr
                   710
                                     715
 Met Glu Ala Thr Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser
                                 730
               725
 Leu Gly Asp Ser Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu
                              745
 Arg Arg Pro Ser Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu
                          760
 Gln Ala Ile Thr Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln
                                         780
                      775
 Glu Pro Ala Leu Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu
                                     795
 Arg Leu Thr Leu Ser Ser Ala Cys Asp Gly Leu Leu Gln Pro Pro Val
                                810
               805
 Asp Thr Gln Pro Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro
                              825
 Ser Pro Val Glu Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg
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835
Pro Ser Leu Pro Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser
                       855
Asn Pro Gln Leu Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala
                                       875
                   870
Ser Leu Leu Glu Pro Thr Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys
                                   890
                885
Arg Pro Pro Ser Lys Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro
                               905
           900
Val Ala Arg Trp Thr Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser
                            920
Pro Pro Ser Cys Gly Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp
                                            940
                        935
Gly Leu Val Trp Pro Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg
                                       955
                   950
Pro His Arg Arg Cys Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys
                                    970
                965
Trp Asn Thr Thr Arg Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His
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                                985
Gly Gly Thr Glu Gly Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
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Tyr Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe
                                25
Ile Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu
                                                45
                            40
Leu Glu Ile Asp His Arg Gln Gln Gln His Thr Asn Asp Lys Lys
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55
                                            60
Arg Ser Gly Pro Pro Arg Gln Asp Thr Tyr Val Ser Thr Pro Ser Glu
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                    70
Ile His Ser Leu Ser Pro Gly Glu Gln Thr Glu Asp Asp Leu Glu Glu
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                                    90
Glu Cys Glu Pro Glu Glu Met Leu Lys Thr Pro
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665

660

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  Thr Val Thr Ser Lys Val Ala Pro Ser Trp Pro Glu Ser His Ser Ser
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  Thr Ser Ser Leu Thr Gln Pro Ile Glu Met Pro Thr Leu Ser Ser Ser
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  Leu Leu Lys Thr Phe Ser Asn Val Phe Gly Arg His Ser Gly Gly Phe
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Arg Lys Gln Arg Ala Val Ser Gln Leu Ser Arg Gly Leu Thr Asp Ile
Phe Leu Gly Thr Ser Ile Ser Ser Ser Ser Trp Ala Pro Leu Arg
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Gly Arg Glu Ala Ala Leu Pro Gly Pro Ala Gly Asp Xaa Ala Val Lys
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Gly Pro Ala Asp Pro Ala Ala Gln His Ser Arg Asp Gly Gln Gly Gly
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Trp Pro Pro Ala Gln Gly Thr Ala Ser Thr Ala Gly Lys Ser Gly Ala
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                                    90
Pro Gly Ala Trp Ser Val Gly Gly Ala Thr Gly Pro Arg Gly Ala Lys
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            100
Gly Pro Arg Thr Gly Arg Pro Ala Pro Ser Pro Gly Ser Pro Pro Arg
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                            120
Glu Ser Arg Cys Leu Ala Pro Gly Pro Ser Arg Leu Asp Pro Gly Pro
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Ala Xaa Ala Ala Ala Pro Gly Ala Leu Arg Pro Pro Ala Asp Pro Ser
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Gln Ala Arg Pro Arg Arg Gly Ser Asn
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gggacactca tgctcagtga ctgatgggat ggggggtaca aagtcccagc cacgtgattc
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cacageteag etectectet eggeeceatt etgeeteete eeggeeettt eeeaggeagt
aageccaagg aacteettaa gaaacateet cactetgaac tecaetgeag ageettette
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Leu Leu Ser Ala Pro-Phe Cys Leu Leu Pro Ala Leu Ser Gln Ala Val
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Ser Pro Arg Asn Ser Leu Arg Asn Ile Leu Thr Leu Asn Ser Thr Ala
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Glu Pro Ser Ser Trp Glu Ser Arg Glu Arg Pro Leu Gln Ser Arg Asn
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                85
Val Tyr Ser Ser Ala Ser Phe Ser Glu His Leu Asp Gly Gly Cys Ser
                                                     110
                                105
            100
Pro Leu Val Leu Gln Ser Leu Ala Arg Arg Ile Ser Ser Thr Trp Leu
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Val Asp Gln Ser Leu Arg Glu
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ggaggcaggt teegcaegaa ataaateaga atgagttatg cagaaaaace egatgaaate
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acgaaagatg agtggatgga aaagctcaat aacttgcatg tccagagagc agacatgaac
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 atggaatctg gaatcgaacc tagtgtggat ctggaaacac ttgatgaacg aatcaagatc
 cgggagatga tactgaaagg tcagattcag gaggccatcg ccttgatcaa cagcctccac
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 aaggtgtgga gtgaagttaa ccaagctgtg ctagattatg aaaatcgcga gtcaacaccc
 720
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Phe Arg Met Glu Ser Gly Ile Glu Pro Ser Val Asp Leu Glu Thr Leu
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Asp Glu Arg Ile Lys Ile Arg Glu Met Ile Leu Lys Gly Gln Ile Gln
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Glu Ala Ile Ala Leu Ile Asn Ser Leu His Pro Glu Leu Leu Asp Thr
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                85
Asn Arg Tyr Leu Tyr Phe His Leu Gln Gln His Leu Ile Glu Leu
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                                105
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Ile Arg Gln Arg Glu Thr Glu Ala Ala Leu Glu Phe Ala Gln Thr Gln
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Leu Ala Glu Gln Gly Glu Glu Ser Arg Glu Cys Leu Thr Glu Met Glu
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                        135
Arg Thr Leu Ala Leu Leu Ala Phe Asp Ser Pro Glu Glu Ser Pro Phe
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Gly Asp Leu Leu His Thr Met Gln Arg Gln Lys Val Trp Ser Glu Val
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                165
Asn Gln Ala Val Leu Asp Tyr Glu Asn Arg Glu Ser Thr Pro Lys Leu
                                185
Ala Lys Leu Leu Lys Leu Leu Trp Ala Gln Asn Glu Leu Asp Gln
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                            200
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Lys Lys Val Lys Tyr Pro Lys Met Thr Asp Leu Ser Lys Gly Val Ile
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 Glu Glu Pro Lys
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Ala Val Arg Ser Tyr Tyr Glu Val Phe Leu Lys Ser Asp Arg Val Ala
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Arg Met Val Gln Ser Gly Gly Cys Ser Ala Asn Asp Phe Arg Glu Val
Phe Lys Lys Asn Ile Glu Lys Arg Val Arg Ser Leu Pro Glu Ile Asp
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Gly Leu Ser Lys Glu Thr Val Leu Ser Ser Trp Ile Ala Lys Tyr Asp
                                     90
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Ala Ile Tyr Arg Gly Glu Glu Asp Leu Cys Lys Gln Pro Asn Arg Met
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 Ala Leu Ser Ala Val Ser Glu Leu Ile Leu Ser Lys Glu Gln Leu Tyr
                             120
 Glu Met Phe Gln Gln Ile Leu Gly Ile Lys Lys Leu Glu His Gln Leu
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 Leu Tyr Asn Ala Cys Gln Leu Asp Asn Ala Asp Glu Gln Ala Ala Gln
                                         155
                     150
 Ile Arg Arg Glu Leu Asp Gly Arg Leu Gln Leu Ala Asp Lys Met Ala
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                 165
 Lys Glu Arg Lys Phe Pro Lys Phe Ile Ala Lys Asp Met Glu Asn Met
                                 185
 Tyr Ile Glu Glu Leu Arg Ser Ser Val Asn Leu Leu Met Ala Asn Leu
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205
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Glu Ser Leu Pro Val Ser Lys Gly Gly Pro Glu Phe Lys Leu Gln Lys
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Leu Lys Arg Ser Gln Asn Ser Ala Phe Leu Asp Ile Gly Asp Glu Asn
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225
Glu Ile Gln Leu Ser Lys Ser Asp Val Val Leu Ser Phe Thr Leu Glu
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Ile Val Ile Met Glu Val Gln Gly Leu Lys Ser Val Ala Pro Asn Arg
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                                265
Ile Val Tyr Cys Thr Met Glu Val Glu Gly Glu Lys Leu Gln Thr Asp
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Gln Ala Glu Ala Ser Arg Pro Gln Trp Gly Asp Ser Gly Glu Phe His
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 960
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Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser Leu Ala Ser Leu Leu Ser
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Glu Ser Glu Ser Pro Gln Glu Ala Gly Arg Gly His Pro Ser Phe Leu
                        55
Pro Gln Gln Lys Glu Ser Ser Glu Ala Ser Glu Leu Ile Leu Tyr Ser
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75
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Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp Ser Gln Tyr Cys Arg
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Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln Gly Asp Ser Tyr Leu
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Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser Pro Pro Glu Asp Ser
                                           125
                         120
Gly Glu Ser Glu Ala Asp Leu Glu Cys Ser Phe Ala Ala Ile His Ser
                    135
Pro Ala Pro Pro Pro Asp Pro Ala Pro Arg Phe Ala Thr Ser Leu Pro
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                                    155
His Phe Pro Gly Cys Ala Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro
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             165
Glu Gly Pro Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln
                                               190
          180
                            185
Glu Lys Phe Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys
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Arg Ala Leu Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe
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Asn Pro Arg Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys
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Ala Ser Arg Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu
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Val Lys Ser Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro
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Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser Ser Val Leu Pro
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Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro Thr Pro Gly Leu
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Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr Met Glu Ala Thr
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Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser Leu Gly Asp Ser
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Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu Arg Arg Pro Ser
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Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu Gln Ala Ile Thr
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Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln Glu Pro Ala Leu
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Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu Arg Leu Thr Leu
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Ser Ser Ala Cys Asp Gly Leu Leu Pro Pro Val Asp Thr Gln Pro
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Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro Ser Pro Val Glu
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Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg Pro Ser Leu Pro
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Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser Asn Pro Gln Leu
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Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala Ser Leu Leu Glu
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                                        555
Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro Val Ala Arg Trp Thr
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Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser Pro Pro Ser Cys Gly
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Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp Gly Leu Val Trp Pro
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Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg Pro His Arg Arg Cys
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Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys Trp Asn Thr Thr Arg
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780
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 Gln Val Pro Tyr Gly Asp Val Val Thr Val Ala Cys Glu Ala Lys Gly
 Glu Pro Met Pro Lys Val Thr Trp Leu Ser Pro Thr Asn Lys Val Ile
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 Pro Thr Ser Ser Glu Lys Tyr Gln Ile Tyr Gln Asp Gly Thr Leu Leu
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 Ile Gln Lys Ala Gln Arg Ser Asp Ser Gly Asn Tyr Thr Cys Leu Val
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 Arg Asn Ser Ala Gly Glu Asp Arg Lys Thr Val Trp Ile His Val Asn
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 Val Gln Pro Pro Lys Ile Asn Gly Asn Pro Asn Pro Ile Thr Thr Val
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Val Leu Pro Ala Pro Tyr Tyr Gly Asn Arg Ile Thr Val His Gly Asn
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Val Cys Met Ala Arg Asn Glu Gly Gly Glu Ala Arg Leu Ile Leu Gln
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Leu Thr Val Leu Glu Pro Met Glu Lys Pro Ile Phe His Asp Pro Ile
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Ser Glu Lys Ile Thr Ala Met Ala Gly His Thr Ile Ser Leu Asn Cys
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Ser Ala Ala Gly Thr Pro Thr Pro Ser Leu Val Trp Val Leu Pro Asn
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Gly Thr Asp Leu Gln Ser Gly Gln Gln Leu Gln Arg Phe Tyr His Lys
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Asn Leu Val Ser Ile Ile Asn Gly Glu Thr Leu Lys Leu Pro Cys Thr
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Asn Gly Thr Leu Thr Val Arg Glu Ala Ser Val Phe Asp Arg Gly Thr
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Tyr Val Cys Arg Met Glu Thr Glu Tyr Gly Pro Ser Val Thr Ser Ile
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Pro Val Ile Tyr Thr Arg Pro Gly Asn Thr Val Lys Leu Asn Cys Met
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Ala Met Gly Ile Pro Lys Ala Asp Ile Thr Trp Glu Leu Pro Asp Lys
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Ser His Leu Lys Ala Gly Val Gln Ala Arg Leu Tyr Gly Asn Arg Phe
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Leu Val Asn Glu Glu Arg Thr Leu Glu Val Glu Ile Glu Pro Gly Val
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Gly Gly Thr Lys Val Pro Leu Glu Ala Arg Pro Val Arg Phe Leu Asp
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 Asn Phe Ser Ser Gly Arg Arg Gly Ala Thr Ser Ala Glu Ala Phe Leu
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 Ala Ala Gly Tyr Gly Val Leu Phe Leu Tyr Arg Ala Arg Ser Ala Phe
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 Pro Tyr Ala His Arg Phe Pro Pro Gln Thr Trp Leu Ser Ala Leu Arg
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 Pro Ser Gly Pro Ala Leu Ser Gly Leu Leu Ser Leu Glu Ala Glu Glu
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 Asn Ala Leu Pro Gly Phe Ala Glu Ala Leu Arg Ser Tyr Gln Glu Ala
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 Ala Ala Ala Gly Thr Phe Leu Ala Val Glu Phe Thr Thr Leu Ala Asp
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 Tyr Leu His Leu Leu Gln Ala Ala Gln Ala Leu Asn Pro Leu Gly
                                     170
 Pro Ser Ala Met Phe Tyr Leu Ala Ala Ala Val Ser Asp Phe Tyr Val
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 Pro Val Ser Glu Met Pro Glu His Lys Ile Gln Ser Ser Gly Gly Pro
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200
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Leu Gln Gly Lys Val Gln Leu Glu Asp Ile Leu His His Leu Glu Lys
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 Arg Gln Arg Asn Arg Leu Arg Leu Glu Glu Asp Lys Pro Ala Val Glu
 Arg Cys Leu Glu Glu Leu Val Phe Gly Asp Val Glu Asn Asp Glu Asp
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 Ala Leu Leu Arg Arg Leu Arg Gly Pro Arg Val Gln Glu His Glu Asp
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 Ser Gly Asp Ser Glu Val Glu Asn Glu Ala Lys Gly Asn Phe Pro Pro
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             100
  Gln Lys Lys Pro Val Trp Val Asp Glu Glu Asp Glu Asp Glu Glu Met
                              120
  Val Asp Met Met Asn Asn Arg Phe Arg Lys Asp Met Met Lys Asn Ala
                                              140
                          135
  Ser Glu Ser Lys Leu Ser Lys Asp Asn Leu Lys Lys Arg Leu Lys Glu
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                      150
  Glu Phe Gln His Ala Met Gly Gly Val Pro Ala Trp Ala Glu Thr Thr
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Lys Arg Lys Thr Ser Ser Asp Asp Glu Ser Glu Glu Asp Glu Asp Asp
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Leu Leu Gln Arg Thr Gly Asn Phe Ile Ser Thr Ser Thr Ser Leu Pro
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Pro Thr Val Ala Arg Ile Ser Ser Val Gln Phe His Pro Gly Ala Gln
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Ile Val Met Val Ala Gly Leu Asp Asn Ala Val Ser Leu Phe Gln Val
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Asp Gly Lys Thr Asn Pro Lys Ile Gln Ser Ile Tyr Leu Glu Arg Phe
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Pro Ile Phe Lys Ala Cys Phe Ser Ala Asn Gly Glu Glu Val Leu Ala
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Thr Ser Thr His Ser Lys Val Leu Tyr Val Tyr Asp Met Leu Ala Gly
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Lys Leu Ile Pro Val His Gln Val Arg Gly Leu Lys Glu Lys Ile Val
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Arg Ser Phe Glu Val Ser Pro Asp Gly Ser Phe Leu Leu Ile Asn Gly
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Ile Ala Gly Tyr Leu His Leu Leu Ala Met Lys Thr Lys Glu Leu Ile
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Gly Ser Met Lys Ile Asn Gly Arg Val Ala Ala Ser Thr Phe Ser Ser
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Asp Ser Lys Lys Val Tyr Ala Ser Ser Gly Asp Gly Glu Val Tyr Val
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Trp Asp Val Asn Ser Arg Lys Cys Leu Asn Arg Phe Val Asp Glu Gly
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Ser Leu Tyr Gly Leu Ser Ile Ala Thr Ser Arg Asn Gly Gln Tyr Val
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Ala Cys Gly Ser Asn Cys Gly Val Val Asn Ile Tyr Asn Gln Asp Ser
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Cys Leu Gln Glu Thr Asn Pro Lys Pro Ile Lys Ala Ile Met Asn Leu
       435 440 445
Val Thr Gly Val Thr Ser Leu Thr Phe Asn Pro Thr Thr Glu Ile Leu
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Ala Ile Ala Ser Glu Lys Met Lys Glu Ala Val Arg Leu Val His Leu
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Pro Ser Cys Thr Val Phe Ser Asn Phe Pro Val Ile Lys Asn Lys Asn
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                               490
Ile Ser His Val His Thr Met Asp Phe Ser Pro Arg Ser Gly Tyr Phe
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Glu Phe Thr Asn Gly Asn Leu Thr Met Ser Asn Glu Phe His Cys Lys
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Asp Phe Leu Ile Phe Thr Thr Gln Ile Leu Thr Ile Leu Gln Leu Arg
Ser Leu Asn Ile Ile Tyr Asn Lys Gln Asn Leu Val Asn Leu Gln Lys
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Ser Asn Ala Leu Lys Lys His Gln Ser Leu Cys Met Cys Arg Thr Asp
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aaataaaagc gttgcagctg tggaaggaga tagaaactcg acatcctgga ttggctgatg
ttagaaatca gataatattt gctgttcgtc aagaatatgt cgagcttgga gatcagctcc
240
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togtgottca gootggagac gaaattgoog ttatoccocc cattagtgga ggatagtgot

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Phe Thr Ala Glu Lys Leu Ser Val Asp Glu Val Ser Gln Leu Val Ile
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Ser Pro Leu Cys Gly Ala Ile Ser Leu Phe Val Gly Thr Thr Arg Asn
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75
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Asn Phe Glu Gly Lys Lys Val Ile Ser Leu Glu Tyr Glu Ala Tyr Leu
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Lys Trp Pro Val Lys His Ile Ala Val Phe His Leu Leu Gly Leu Val
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Pro Val Ser Glu Ala Ser Thr Val Ile Ala Val Ser Ser Ala His Arg
                                             140
                        135
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Ala Ala Ser Leu Glu Ala Val Ser Tyr Ala Ile Asp Ser Leu Lys Ala
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                    150
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His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys Lys Ile Gly
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Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro His Glu Val
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Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg Trp Ser Ala
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Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu Gly Ala Gly
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                            120
Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Glu Glu Thr Ala Ala
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Trp Val Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val
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Asn Val Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu
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Ala Leu Gln Glu Glu Ile Asp Arg Glu Ser Gly Lys Thr Glu Ala Ser
Glu Thr Arg Lys Trp Thr Gly Thr Gln Phe Gly Gln Trp Asp Thr Ala
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Gln Asn Leu Gln Arg Asp Tyr Asp Arg Ala Met Ser Trp Lys Tyr Ser
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 Gln Gln Gln Gln Gln Gln Leu Gln Lys Gln Gln Gln Gln Gln
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Pro Glu Ala Lys Gln Glu Ile Leu Glu Asn Lys Asp Val Val Gln
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His Val His Phe Asp Gly Leu Gly Arg Thr Lys Asp Asp Ile Ile Ile
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Cys Glu Ile Gly Asp Val Phe Lys Ala Lys Asn Leu Ile Glu Val Met
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Arg Lys Ser His Glu Ala Arg Glu Lys Leu Leu Arg Leu Gly Ile Phe
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Arg Gln Val Asp Val Leu Ile Asp Thr Cys Gln Gly Asp Gly Ala Leu
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Pro Asn Gly Leu Asp Val Thr Phe Glu Val Thr Glu Leu Arg Arg Leu
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Thr Gly Ser Tyr Asn Thr Met Val Gly Asn Asn Glu Gly Ser Met Val
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Leu Gly Leu Lys Leu Pro Asn Leu Leu Gly Arg Ala Glu Lys Val Thr
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Phe Gln Phe Ser Tyr Gly Thr Lys Glu Thr Ser Tyr Gly Leu Ser Phe
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Phe Lys Pro Arg Pro Gly Asn Phe Glu Arg Asn Phe Ser Val Asn Leu
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Tyr Lys Val Thr Gly Gln Phe Pro Trp Ser Ser Leu Arg Glu Thr Asp
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Asn Lys Gln Leu Ile Phe Asp Ser Val Phe Ser Ala Ser Phe Trp Gly
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Lys Leu Ala Glu Cys Ile Arg Trp Ser Tyr Gly Ala Gly Ile Val Leu
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1980					tcaaaatgcc
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2340					

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Asp Ile Val Thr Ile Ser Gln Ala Thr Pro Ser Ser Val Ser Arg Gly
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Thr Ala Pro Ser Asp Asn Arg Val Thr Ser Phe Arg Asp Leu Ile His
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Asp Gln Asp Glu Asp Glu Glu Glu Glu Gly Gln Arg Ser Arg Phe
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Tyr Ala Gly Gly Ser Glu Arg Ser Gly Gln Gln Ile Val Gly Pro Pro
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Arg Lys Lys Ser Pro Asn Glu Leu Val Asp Asp Leu Phe Lys Gly Ala
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Lys Glu His Gly Ala Val Ala Val Glu Arg Val Thr Lys Ser Pro Gly
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Glu Thr Ser Lys Pro Arg Pro Phe Ala Gly Gly Gly Tyr Arg Leu Gly
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 Ala Ala Pro Glu Glu Glu Ser Ala Tyr Val Ala Gly Glu Lys Arg Gln
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His Ser Ser Gln Asp Val His Val Val Leu Lys Leu Trp Lys Ser Gly
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 Phe Ser Leu Asp Asn Gly Glu Leu Arg Ser Tyr Gln Asp Pro Ser Asn
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 Ala Gln Phe Leu Glu Ser Ile Arg Arg Gly Glu Val Pro Ala Glu Leu
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 Arg Arg Leu Ala His Gly Gly Gln Val Asn Leu Asp Met Glu Asp His
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 Arg Asp Glu Asp Phe Val Lys Pro Lys Gly Ala Phe Lys Ala Phe Thr
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 Gly Glu Gly Gln Lys Leu Gly Ser Thr Ala Pro Gln Val Leu Ser Thr
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260
Ser Ser Pro Ala Gln Gln Ala Glu Asn Glu Ala Lys Ala Ser Ser Ser
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Ile Leu Ile Asp Glu Ser Glu Pro Thr Thr Asn Ile Gln Ile Arg Leu
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Ala Asp Gly Gly Arg Leu Val Gln Lys Phe Asn His Ser His Arg Ile
                    310
Ser Asp Ile Arg Leu Phe Ile Val Asp Ala Arg Pro Ala Met Ala Ala
                                    330
                325
Thr Ser Phe Ile Leu Met Thr Thr Phe Pro Asn Lys Glu Leu Ala Asp
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Glu Ser Gln Thr Leu Lys Glu Ala Asn Leu Leu Asn Ala Val Ile Val
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Gln Arg Leu Thr
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3831

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<211> 242

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Ala Asn Leu Gly Lys Phe Leu Glu Leu Leu Arg Ser His Gln Ser Arg
                            40
Pro Ala Lys Cys Leu Thr Ile Met Trp Ala Leu Gly Gln Ala Gly Phe
Ala Asn Leu Thr Glu Gly Leu Lys Val Trp Leu Gly Ile Met Leu Pro
                                        75
                    70
Val Leu Gly Ile Lys Ser Leu Ser Pro Phe Ala Ile Thr Tyr Leu Asp
                                    90
                85
Arg Leu Leu Met His Pro Asn Leu Thr Lys Gly Phe Gly Met Ile
                                105
Gly Pro Lys Asp Phe Phe Pro Leu Leu Asp Phe Ala Tyr Met Pro Asn
                                                125
                            120
        115
Asn Ser Leu Thr Pro Ser Leu Gln Glu Gln Leu Cys Gln Leu Tyr Pro
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                                            140
Arg Leu Lys Val Leu Ala Phe Gly Ala Lys Pro Asp Ser Thr Leu His
                    150
Thr Tyr Phe Pro Ser Phe Leu Ser Arg Ala Thr Pro Ser Cys Pro Pro
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                165
Glu Met Lys Lys Glu Leu Leu Ser Ser Leu Thr Glu Cys Leu Thr Val
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            180
Asp Pro Leu Ser Ala Ser Val Trp Arg Gln Leu Tyr Pro Lys His Leu
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Ser Gln Ser Ser Leu Leu Leu Glu His Leu Leu Ser Ser Trp Glu Gln
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Ile Pro Lys Lys Val Gln Lys Ser Leu Gln Glu Thr Ile Gln Ser Leu
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Lys Leu
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 ctcctcccga agatgagttt tgtagcccag gtgtttgcac actcacactt gctcactccc
 tcacacacaa aaccctcact ctttgctttt tctggggaga gggaggccac tggcagaagc
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geetaceetg geeacagtea gtteecatte teatttteta agaattttat cacaaaacag
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Lys Glu Val Lys Trp Gly Pro Arg Arg Lys Ala Gly Gly Val Trp Ala
                            40
Glu Pro Ala Ser Gly Gly Leu Pro Pro Pro Glu Asp Glu Phe Cys Ser
                                             60
                        55
Pro Gly Val Cys Thr Leu Thr Leu Ala His Ser Leu Thr His Lys Thr
                    70
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Leu Pro Trp Pro Gln Ser Val Pro Ile Leu Ile Phe
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aagctgtttt ctctgagttc tgtggagcag ctggatcaag tccacggaag caatgaaatc
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395
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385
Glu Asp Gly Gly Ala Leu Arg Gly Glu Val Ile Pro Glu His Glu Phe
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Ala Thr Gly Pro Val Cys Leu Asp Asp Glu Asn Glu Phe Pro Pro Ile
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240
caccatattc cacaggettt etecectagg acgtactaac agggagttte cacagggaaa
300
aattotottt taaaaaatta acagtaaaaa taggagttac ttactatota gatgaacaca
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Leu Arg Arg Ser Phe Ala Leu Val Ala Gln Ala Arg Val Gln Trp Arg
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        35
Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Arg Leu Lys Arg Phe Ser
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His Leu Ser Leu Pro Ser Ser
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<210> 4641
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 Gln Trp Asn Tyr Cys Thr Leu Ser Gln Glu Ile Leu Arg Arg Pro Ile,
                            40
 Val Ala Cys Glu Leu Gly Arg Leu Tyr Asn Lys Asp Ala Val Ile Glu
                                           60
 Phe Leu Leu Asp Lys Ser Ala Glu Lys Ala Leu Gly Lys Ala Ala Ser
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 His Ile Lys Ser Ile Lys Asn Val Thr Glu Leu Lys Leu Ser Asp Asn
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 Pro Ala Trp Glu Gly Asp Lys Gly Asn Thr Lys Gly Asp Lys His Asp
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 Asp Leu Gln Arg Ala Arg Phe Ile Cys Pro Val Val Gly Leu Glu Met
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 Asn Gly Arg His Arg Phe Cys Phe Leu Arg Cys Cys Gly Cys Val Phe
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 Ser Glu Arg Ala Leu Lys Glu Ile Lys Ala Glu Val Cys His Thr Cys
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155
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145
Gly Ala Ala Phe Gln Glu Asp Asp Val Ile Met Leu Asn Gly Thr Lys
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Glu Asp Val Asp Val Leu Lys Thr Arg Met Glu Glu Arg Arg Leu Arg
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Ala Lys Leu Glu Lys Lys Thr Lys Lys Pro Lys Ala Ala Glu Ser Val
                                                 205
                            200
Ser Lys Pro Asp Val Ser Glu Glu Ala Pro Gly Pro Ser Lys Val Lys
                        215
Thr Gly Lys Pro Glu Glu Ala Ser Leu Asp Ser Arg Glu Lys Lys Thr
                                        235
                    230
225
Asn Leu Ala Pro Lys Ser Thr Ala Met Asn Glu Ser Ser Ser Gly Lys
                                    250
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Ala Gly Lys Pro Pro Cys Gly Ala Thr Lys Arg Ser Ile Ala Asp Ser
                                265
            260
Glu Glu Ser Glu Ala Tyr Lys Ser Leu Phe Thr Thr His Ser Ser Ala
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Lys Arg Ser Lys Glu Glu Ser Ala His Trp Val Thr His Thr Ser Tyr
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Cys Phe
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780 -
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Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala
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       35
Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr
                       55
Gln Glu Asp Asp Met Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe
                                       75
                   70
Gly Arg Leu Asp Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro
                                   90
               85
Gln Arg Pro Glu Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu
                                                  110
                               105
Leu Asn Leu Leu Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr
                                              125
Leu Arg Lys Ser Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly
                       135
Ala Ile Gly Gln Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala
                                       155
                   150
Val Thr Ala Met Thr Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly
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Val Arg Val Asn Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp
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Gly Met Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val
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Val Tyr Ala Gly Asn Phe Val Glu Val Val Arg Asn Lys Pro Val Ala
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ccctacccca 1140	atccagctcc	ccaatggctg	tctgagaagg	catgggcaga	gattgtccgt
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Glu Leu Glu Glu Lys Lys Asn Gln Leu Ile Val Glu Ser Ala Lys Asn
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Lys Lys His Leu Lys Glu Ile Glu Asp Lys Ile Leu Glu Val Leu Ser
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Met Ser Lys Gly Asn Ile Leu Glu Asp Glu Thr Ala Ile Lys Val Leu
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Ser Ser Ser Lys Val Leu Ser Glu Glu Ile Ser Glu Lys Gln Lys Val
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Tan	T1	Mat	Wie		Leu	Thr	His	Ser	Thr	Lvs	Ser	Glu	Glu	Leu	Asn
Leu	IYL	MEL		361	Deu			185		-1-			190		
_	_		180	<b></b>	T1_	T10	7 00		Dha	Thr	T.em	Ser		Tvr	Asn
Leu	Arg		Lys	Tyr	Ile	TTE.		UIS	PILE	1111	neu	205		-1-	•
		195				_	200	_	_	_	<b>-</b>		nh -	C	T
Asn	Val	Cys	Arg	Ser	Leu		Glu	Lys	Asp	гåг	Leu	Leu	Pne	Ser	Leu
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PIO	ASII	PIO		110	GIII			265		-,-		-	270		
			260		•	B	T		uic	Glar	T.011	Met		His	Leu
Val	Arg		ser	Ala	Leu	PIO		Leu	ura	GLY	Беи	285	014		
		275					280	_		_	•		71-	T	Dwa
Glu	Gln	Asn	Leu	Gly	Glu	Trp	Lys	Leu	Ile	Tyr	Asp	Ser	ALA	Trp	PIO
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Lvs	Met	Val	Ile	Leu	Arg	Cys	Leu	Arg	Pro	Asp	Lys	Met	Val	Pro	Ala
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*** 1	B	C1.,	Dho	Tla	Ala	Glu	His	Met	Glv	Lvs	Leu	Tvr	Ile	Glu	Ala
vai	Arg	GIU		110				345	1			•	350		
			340	•	<b>~1</b>	~1··	C		N cm	Acn	Ser	Ser		Cvs	Ala
Pro	Thr			Leu	Gln	GIA			ASII	ASP	361	365	Cys	cys	
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Tle	Ser	Leu	Gly	Gln	Gly	Gln	Gly	Pro	Ile	Ala	Ala	Lys	Met	Ile	Asn
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A an	λla	T۱۵	Lve	Asp	Gly	Thr	Tro	Val	Val	Leu	Gln	Asn	Cys	His	Leu
ASII	ATO	110	420		<b>U</b> #2			425					430		
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Ala	Ala			Mec	PIO	IIIL			,_		41-	445			
		435					440				Two			Sar	Tir
Val	Pro	Glu	Ser	Thr	Asn			Pne	Arg	Leu	110	neu	1111	Ser	TYL
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•			. D~o	Tle	Ser	Aer	Pro	Val	Phe	Phe	Gln	Ser	Cys	Ala	Lys
Leu	ASI	ı Ası			. Ser	rop		505					510		-
			500		_		•				Cva	Dhe			Δla
Ala	Val	. Met	Trp	Gln	Lys	Met			GLY	reu	. Cys	E 2 E	. F11C	1113	ALG
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ፓህ፣	Gli	ı Phe	Asn	Glu	ı Ser	Ast	Leu	Arg	Ile	e Ser	Met	Trp	Gln	Ile	Gln
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74.	nh-	. 7	, Do-	) Der	Tyr	• T.V.	Glu	Val	Pro	Phe	. Asp	Ala	Leu	Thr	Tyr
met	. Pne	e Let	ı wan	. wo?	, rat	. ⊔y≥	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				-			_	-

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PCT/US00/08621 WO 00/58473

105

110

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gtttgaacct ctaaccaaaa ggaacgaaga tgccgaggag cctgcctacg gagacacggc
 180
 cagtaacgga gatccccaga tccacgtggg actcctgcgc gacagtggca gcgagtgtct
 cetegtgeae gtgetgeage tgaagaacee ggeggggetg geggtgaagg aagaetgeaa
 agtocacato ogagtotatt tgococcact toggtggata goggotgtag caactgcaco
 360
 cagaccagec etcegtacce agagecetgt tgcatgggta tegactecat cetgggecae
 ccatttgctg ctcaggcagg gccttacagc cccgagaaat ttcagccctc gcctcttaag
 gttgataagg aaaccaacac ggaagatctc tttctggaag aagcagccag cctcgtgaag
 gageggeeca geegeegge eegaggteg cettttgtte ggagtggeae gattgteegt
 teccagacat tetegeetgg ageacgaage cagtatgttt geagaettta tegtagtgae
 660
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agegacagtt caacgetgee ceggaagtee ceetttgtee gaaataettt ggaaagaega
720
accetteget ataageagte atgeaggtet tecetggetg ageteatgge eegeacetee
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840
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gtgcagacct ttagggagaa gatagcattc ttcacaaggc caaggatcaa catacctcct
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ttaatataca catttt
1276
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Pro Tyr Ser Pro Glu Lys Phe Gln Pro Ser Pro Leu Lys Val Asp Lys
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Glu Thr Asn Thr Glu Asp Leu Phe Leu Glu Glu Ala Ala Ser Leu Val
Lys Glu Arg Pro Ser Arg Arg Ala Arg Gly Ser Pro Phe Val Arg Ser
Gly Thr Ile Val Arg Ser Gln Thr Phe Ser Pro Gly Ala Arg Ser Gln
                    70
Tyr Val Cys Arg Leu Tyr Arg Ser Asp Ser Asp Ser Ser Thr Leu Pro
                                    90
Arg Lys Ser Pro Phe Val Arg Asn Thr Leu Glu Arg Arg Thr Leu Arg
                                105
Tyr Lys Gln Ser Cys Arg Ser Ser Leu Ala Glu Leu Met Ala Arg Thr
                            120
Ser Leu Asp Leu Glu Leu Asp Leu Gln Ala Ser Arg Thr Arg Gln Arg
                        135
Gln Leu Asn Glu Glu Leu Cys Ala Leu Arg Glu Leu Arg Gln Arg Leu
                                        155
                    150
Glu Asp Ala Gln Leu Arg Gly Gln Thr Asp Leu Pro Pro Trp Val Leu
                                    170
                165
Arg Asp Glu Arg Leu Arg Gly Leu Leu Arg Glu Ala Glu Arg Gln Thr
                                185
Arg Gln Thr Lys Leu Asp Tyr Arg His Glu Gln Ala Ala Glu Lys Met
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200
       195
Leu Lys Lys Ala Ser Lys Glu Ile Tyr Gln Leu Arg Gly Gln Ser His
                       215
Lys Glu Pro Ile Gln Val Gln Thr Phe Arg Glu Lys Ile Ala Phe Phe
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                   230
Thr Arg Pro Arg Ile Asn Ile Pro Pro Leu Pro Ala Asp Asp Val
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<212> DNA
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cttgatetee ageacgaaga tgtaaaggaa ccacaggate atggegtage egegettgge
egtgegeace teggegeeca eccaeaege caegtagege ageaecagea ggaageacae
gtegeceacc ageacgatga tgcacacgec gatettgege gggecetggt tetgetecac
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 <211> 152
 <212> PRT
 <213> Homo sapiens
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 Ala Val Gln Arg His Glu Gln Glu Gln Ala Gly His Thr His Arg
 Gln Gln Gln Arg Gln Arg Leu Ala Arg His Gly Val Arg Arg Ala Ala
 Pro Arg Arg Leu Val Val Leu Glu Asp Glu Val Glu Leu Asp Leu Gln
 His Glu Asp Val Lys Glu Pro Gln Asp His Gly Val Ala Ala Leu Gly
                    70
 Arg Ala His Leu Gly Ala His Pro His Gly His Val Ala Gln His Gln
                                   90
 Gln Glu Ala His Val Ala His Gln His Asp Asp Ala His Ala Asp Leu
                               105
            100
 Ala Arg Ala Leu Val Leu Leu His Gln Val Arg Val His Asp Gly His
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 Ala Ala His Asp His Gln Arg Gly Gln Ala His Val Ala Pro Val Arg
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140
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Gly Arg Gln His His Gly Arg Pro
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<213> Homo sapiens
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gagtcaggcc tagggaaatc cacceteate aacageetet teetcaecaa eetetatgag
gategecagg tgecagagge cagtgetege ttgacacaga ccctggecat tgagegeegg
ggcgtagaga ttgaggaagg gggtgtgaaa gtgaagctga cccttgtgga cacacctggc
300
tttggggact cagtggactg ctctgactgc tggcttccgg tggtgaaatt catcgaggag
caatttgage agtacettag ggatgagagt ggeetgaace ggaagaacat ceaggactee
cgagtccact gctgcctcta cttcatctca cccttcggcc gggctccggc ccctagatgt
ggcttcctcc gggcaataca cgagaaagtc aacatcatcc cagtcattgg caaagcggat
gccctgatgc cccaggaaac ccaggccctc aagcagaaga tccgggatca gttgaaggaa
gaggagatec acatetacea gtteccegaa tgtgaetetg atgaagatga agaetteaag
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720
gta
723
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<211> 233
<212> PRT
<213> Homo sapiens
<400> 4658
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Arg Lys Ser Val Lys Lys Gly Phe Asp Phe Thr Leu Met Val Ala Gly
                                25
Glu Ser Gly Leu Gly Lys Ser Thr Leu Ile Asn Ser Leu Phe Leu Thr
Asn Leu Tyr Glu Asp Arg Gln Val Pro Glu Ala Ser Ala Arg Leu Thr
                        55
Gln Thr Leu Ala Ile Glu Arg Arg Gly Val Glu Ile Glu Gly Gly
                                        75
Val Lys Val Lys Leu Thr Leu Val Asp Thr Pro Gly Phe Gly Asp Ser
```

PCT/US00/08621 WO 00/58473

90

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85
Val Asp Cys Ser Asp Cys Trp Leu Pro Val Val Lys Phe Ile Glu Glu
                                105
            100
Gln Phe Glu Gln Tyr Leu Arg Asp Glu Ser Gly Leu Asn Arg Lys Asn
                                                125
Ile Gln Asp Ser Arg Val His Cys Cys Leu Tyr Phe Ile Ser Pro Phe
                        135
    130
Gly Arg Ala Pro Ala Pro Arg Cys Gly Phe Leu Arg Ala Ile His Glu
                                        155
Lys Val Asn Ile Ile Pro Val Ile Gly Lys Ala Asp Ala Leu Met Pro
                                    170
                165
Gln Glu Thr Gln Ala Leu Lys Gln Lys Ile Arg Asp Gln Leu Lys Glu
                                185
Glu Glu Ile His Ile Tyr Gln Phe Pro Glu Cys Asp Ser Asp Glu Asp
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                            200
        195
Glu Asp Phe Lys Arg Gln Asp Ala Glu Met Lys Glu Ser Ile Pro Phe
Ala Val Val Gly Ser Cys Glu Val Val
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225
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<211> 864
<212> DNA
<213> Homo sapiens
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ggcgccggtg gtcgttgtga cccaacctgg agtcggtccc ggtccggccc cccagaactc
caactggcag acaggcatgt gtgactgttt cagcgactgc ggagtctgtc tctgtggcac
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 tggaacaagc gtcgcaatga ggactctcta caggacccga tatggcatcc ctggatctat
 ttgtgatgac tatatggcaa ctctttgctg tcctcattgt actctttgcc aaatcaagag
 agatatcaac agaaggagag ccatgcgtac tttctaaaaa ctgatggtga aaagctctta
 ccgaagcaac aaaattcagc agacacctct tcagcttgag ttcttcacca tcttttgcaa
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ctgaaatatg atggatatgc ttaagtacaa ctgatggcat gaaaaaaatc aaatttttga
 600
 tttattataa atgaatgttg tccctgaact tagctaaatg gtgcaactta gtttctcctt
 gctttcatat tatcgaattc gaatttcctg gcttataaac tttttaaatt acatttgaaa
 tataaaccaa atgaaatatt ttactgataa gattcttcat gcttctttgc tctccttaaa
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864
<210> 4660
<211> 192
<212> PRT
<213> Homo sapiens
<400> 4660
Met Pro Ser Val Val Leu Lys His Ile His His Ile Ser Val Ala Lys
                                    10
Asp Gly Glu Glu Leu Lys Leu Lys Arg Cys Leu Leu Asn Phe Val Ala
                                25
Ser Val Arg Ala Phe His His Gln Phe Leu Glu Ser Thr His Gly Ser
                            40
        35
Pro Ser Val Asp Ile Ser Leu Asp Leu Ala Lys Ser Thr Met Arg Thr
                        55
Ala Lys Ser Cys His Ile Val Ile Thr Asn Arg Ser Arg Asp Ala Ile
                                        75
                    70
Ser Gly Pro Val Glu Ser Pro His Cys Asp Ala Cys Ser Thr Gln Thr
                                    90
Ala Phe Ile His Ile Ser Cys Asn Leu Thr Pro Lys Ala Arg Glu Thr
                                                    110
                                105
            100
Lys Cys Ala Thr Glu Thr Asp Ser Ala Val Ala Glu Thr Val Thr His
                                                125
                            120
        115
Ala Cys Leu Pro Val Gly Val Leu Gly Gly Arg Thr Gly Thr Asp Ser
                                            140
                        135
Arg Leu Gly His Asn Asp His Arg Arg Leu Ser Leu His Phe Gln Cys
                                        155
                   150
Arg Ala Phe His Val Val Phe Ile Cys Gly Glu Ile Leu Ser Gln Ala
                                    170
               165
Thr Arg His Phe Leu Leu Gly Thr Leu Phe Thr Asn Phe His Cys Phe
                                                    190
                                185
           180
<210> 4661
<211> 153
<212> DNA
<213> Homo sapiens
<400> 4661
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tttgaggacc ctcaccatgg ccatgggcag ttc
153
<210> 4662
<211> 51
<212> PRT
<213> Homo sapiens
<400> 4662
Arg Ile Cys Met Pro Leu Thr Val Asp Glu Tyr Lys Ile Gly Gln Leu
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15
                                    10
Tyr Met Ile Ser Lys His Ser His Glu Gln Ser Asp Arg Gly Glu Gly
                                25
           20
Val Glu Val Val Gln Asn Glu Pro Phe Glu Asp Pro His His Gly His
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Gly Gln Phe
    50
<210> 4663
<211> 1550
<212> DNA
<213> Homo sapiens
<400> 4663
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cagacggatg acccaggccc cctcgatggc cctgacetec aggccageca etcagagete
caggtgccca cccctggcag agccggccta ctgaacacct ctggtaccaa aggcttagaa
tgttctcctt caactcccac catgaattct tacttttata agttcatgat caaccttctc
aagagattca gcagcgaacg gaagctcctg gaggtcagag gccctttcat catcaggcag
etgtgeetee tgetgaatge ggagaacate ttecaeteaa tggeagaeat eetgetgegg
gaggaggacc tcaagttcgc ctcgaccatg gtccacgccc tcaacaccat cctgctgacc
tecacagage tettecaget aaggaaccag etgaaggace tgaagaccet ggagagecag
aacetgttet getgeetgta eegeteetgg tgecacaace cagteaceac ggtgteeete
tgcttcctca cccagaacta ccggcacgcc tatgacctca tccagaagtt tggggacctg
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gecetetacg geetgeteat geteetgeeg cagageageg cettecaget getetegeae
eggetecagt gegtgeceaa ecetgagetg etgeagaceg aagacagtet aaaggeagee
cccaagtccc agaaagctga ctcccctagc atcgactacg cagagctgct gcagcacttt
960
gagaaggtcc agaacaagca cctggaagtg cggcaccagc ggagcgggcg tggggaccac
ctggaccgga gggttgtcct ctgacaggcc tggcacggag gagggcccac cgagtggtcc
catgaaacac taagggtcgt cacgccctcc cgaggagctc aaggacctgc ctgtcaggac
cagggetggg cetgecaace cagggeagtg ttggggeegg aggetgetgt gtetgeecaa
1200
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getectetca gagtecagte eccaggeete cagegetgte agetgeacce tggeattete
acagagetgg etgeccaece agtgggggge tatageetea gagaceaete ateetetgga
atcaacctct ttctaatacc ctcttggaaa aagagettge ceeteeteca geacactaga
getetggeet tgtgtgtata tgtatacata egtgaacaca tgeetgtgtg tgtgtgtg
tgtgtacttg tatgcacgta ggcaccagca caaagatctg aatgatgcac cccacccca
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<211> 347
<212> PRT
<213> Homo sapiens
<400> 4664
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Ser Asp Glu Ser Asp Glu Val Ile Leu Lys Asp Leu Glu Val Leu Ala
                               25
           20
Glu Ile Ala Ser Ser Pro Ala Gly Gln Thr Asp Asp Pro Gly Pro Leu
                           40
Asp Gly Pro Asp Leu Gln Ala Ser His Ser Glu Leu Gln Val Pro Thr
                       55
Pro Gly Arg Ala Gly Leu Leu Asn Thr Ser Gly Thr Lys Gly Leu Glu
                   70
Cys Ser Pro Ser Thr Pro Thr Met Asn Ser Tyr Phe Tyr Lys Phe Met
                                   90
               85
Ile Asn Leu Leu Lys Arg Phe Ser Ser Glu Arg Lys Leu Leu Glu Val
                               105
Arg Gly Pro Phe Ile Ile Arg Gln Leu Cys Leu Leu Leu Asn Ala Glu
                                               125
                           120
Asn Ile Phe His Ser Met Ala Asp Ile Leu Leu Arg Glu Glu Asp Leu
                                           140
                       135
Lys Phe Ala Ser Thr Met Val His Ala Leu Asn Thr Ile Leu Leu Thr
                   150
Ser Thr Glu Leu Phe Gln Leu Arg Asn Gln Leu Lys Asp Leu Lys Thr
                                   170
Leu Glu Ser Gln Asn Leu Phe Cys Cys Leu Tyr Arg Ser Trp Cys His
                               185
Asn Pro Val Thr Thr Val Ser Leu Cys Phe Leu Thr Gln Asn Tyr Arg
                            200
His Ala Tyr Asp Leu Ile Gln Lys Phe Gly Asp Leu Glu Val Thr Val
                        215
Asp Phe Leu Ala Glu Val Asp Lys Leu Val Gln Leu Ile Glu Cys Pro
                                       235
                   230
Ile Phe Thr Tyr Leu Arg Leu Gln Leu Leu Asp Val Lys Asn Asn Pro
                                   250
                245
Tyr Leu Ile Lys Ala Leu Tyr Gly Leu Leu Met Leu Leu Pro Gln Ser
                               265
Ser Ala Phe Gln Leu Leu Ser His Arg Leu Gln Cys Val Pro Asn Pro
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285
                           280
       275
Glu Leu Leu Gln Thr Glu Asp Ser Leu Lys Ala Ala Pro Lys Ser Gln
                       295
Lys Ala Asp Ser Pro Ser Ile Asp Tyr Ala Glu Leu Leu Gln His Phe
                                      315
                   310
Glu Lys Val Gln Asn Lys His Leu Glu Val Arg His Gln Arg Ser Gly
                                  330
Arg Gly Asp His Leu Asp Arg Arg Val Val Leu
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<211> 1043
<212> DNA
<213> Homo sapiens
<400> 4665
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aaagagaaag agccagtggt tgttgagaca gtagaagaga aaaaggaacc tatcctagtg
tgtccacctt tacgaagccg agcatacaca ccacctgaag atctccagag tcgtttggaa
tettacgtta aagaagtttt tggttcatct etteetagta attggcaaga cateteeetg
gaagatagtc gtctaaagtt caatcttctg gctcatttag ctgatgactt gggtcatgta
gtccctaact ccagactcca ccagatgtgc agggttagag atgttcttga tttctataat
gtecetatte aagatagate taaatttgat gaactcagtg ccagtaatet geceecaat
ttgaaaatca cttggagtta ctaagcaatt cggaagagaa acacattgaa atcactgtct
ttccctgagc aagggggctg ctcattagat cttttgatac tttaccatgt gaaatactac
cagaactgtt ctctaaaccc actttttctg tagaggaatg tatcatcttt tttttctca
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 ttcatcctgt taggattcat atctaagata gagttatgca ttgcacatac acaaataaac
 ttttattaga tagataccta taaaagaaac ataaaagtat gttgtgtatt actgacagtt
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 1043
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<212> PRT
<213> Homo sapiens
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Gly Ile Thr Arg Arg Val Phe Met Trp Thr Val Ser Gly Thr Pro Cys
                                                    30
Arg Glu Phe Trp Ser Arg Phe Arg Lys Glu Lys Glu Pro Val Val Val
Glu Thr Val Glu Glu Lys Lys Glu Pro Ile Leu Val Cys Pro Pro Leu
                        55
Arg Ser Arg Ala Tyr Thr Pro Pro Glu Asp Leu Gln Ser Arg Leu Glu
                                        75
                    70
Ser Tyr Val Lys Glu Val Phe Gly Ser Ser Leu Pro Ser Asn Trp Gln
                                                        95
                85
                                    90
Asp Ile Ser Leu Glu Asp Ser Arg Leu Lys Phe Asn Leu Leu Ala His
                                105
            100
Leu Ala Asp Asp Leu Gly His Val Val Pro Asn Ser Arg Leu His Gln
                                                125
                            120
Met Cys Arg Val Arg Asp Val Leu Asp Phe Tyr Asn Val Pro Ile Gln
                                            140
                        135
    130
Asp Arg Ser Lys Phe Asp Glu Leu Ser Ala Ser Asn Leu Pro Pro Asn
                                        155
                                                             160
                    150
145
Leu Lys Ile Thr Trp Ser Tyr
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<212> DNA
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cctctgctgg aggggaaagc ccgctcctgt tttgctatga ccgagcccca ggttgcctct
180
tcagatgcca ccaacattga ggcttccatc agagaggagg acagcttcta tgtcataaac
240
ggtcacaaat ggtggatcac aggcatcctg gatcctcgtt gccaactctg tgtgtttatg
ggaaaaacag acccacatge accaagacac cggcagcagt ctgtgctctt ggttcccatg
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tgcatgaggc tgatcgggtt ctcagagagg gccctggcac tcatgaaggc ccgcgtgagt
600
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gettteecce geacceagea etgacteaga accaceacet tetgetttge tgteggaett
660
caatteetae etgttttetg agtgeagtee tageaggtga ageaaggtga tgteettgee
720
aagaagttge atteetgtet getttgeate tgetaetttg etgeagtttg gatteagage
agaatggacc ccactetgte gaggtgacct gaagggaaac gccaggetet gtagcagcag
agggcaaggt tccaaggtgt aaaggtcatg ctgctagcac attattaaaa atcagtctgg
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aaaaaaaaa a
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<210> 4668
<211> 207
<212> PRT
<213> Homo sapiens
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Xaa Ala Met Gly Thr Ser Leu Tyr Ala Pro Glu Val Cys Asn Cys Ser
Ala Pro Asp Thr Gly Asn Met Glu Leu Leu Val Arg Tyr Gly Thr Glu
                                 25
Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu Glu Gly Lys Ala Arg
                             40
 Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala Ser Ser Asp Ala Thr
                         55
Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser Phe Tyr Val Ile Asn
                     70
 Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp Pro Arg Cys Gln Leu
                                      90
 Cys Val Phe Met Gly Lys Thr Asp Pro His Ala Pro Arg His Arg Gln
                                 105
             100
 Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro Gly Ile Lys Ile Ile
                                                 125
 Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala Pro Gly Gly His Gly
                                              140
                         135
 Glu Val Arg Phe Glu His Val Arg Val Pro Lys Glu Asn Met Val Leu
 Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly Pro Gly
                                      170
                 165
 Arg Ile His His Cys Met Arg Leu Ile Gly Phe Ser Glu Arg Ala Leu
 Ala Leu Met Lys Ala Arg Val Ser Ala Phe Pro Arg Thr Gln His
                                                  205
                              200
  <210> 4669
  <211> 683
 <212> DNA
  <213> Homo sapiens
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gacatgaaca taaaaaaaca gattcaggaa cagcaccagg ctgccattat tattcagaag
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tettattaca gaggetttaa agtacgaaag gatatteaaa atatgeaeeg ggetgeeaea
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gcaattgtgg ttatacagaa ttattatagg ttgtatgtta gagtaaaaac agaaagaaaa
aactttttag cagttcagaa atctgtccga actattcagg ctgcttttag aggcatgaaa
gttagacaaa aattgaaaaa atgtatcaga ggaaaagatg gcagccattg ttaaccaatc
tgcactctgc tgttacagaa gtaaaactca gtatgaagct gttcaaagtg aaggtgttat
gattcaagag tggtataaag ctt
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 <210> 4670
 <211> 135
 <212> PRT
 <213> Homo sapiens
 <400> 4670
 Xaa Ser Phe Ser Gly Leu Arg Gly Ile Ile Gln Glu Lys Tyr Arg Ala
  1
 Asn Lys Lys Lys Gln Lys Val Phe Gln His Asn Glu Leu Lys Lys Glu
                                 25
             20
 Thr Cys Val Gln Ala Gly Phe Gln Asp Met Asn Ile Lys Lys Gln Ile
 Gln Glu Gln His Gln Ala Ala Ile Ile Gln Lys His Cys Lys Ala
 Phe Lys Ile Arg Lys His Tyr Leu His Ile Arg Ala Thr Val Val Ser
 Ile Gln Arg Arg Tyr Arg Lys Leu Thr Ala Val Arg Thr Gln Ala Val
                 85
 Ile Cys Ile Gln Ser Tyr Tyr Arg Gly Phe Lys Val Arg Lys Asp Ile
                                 105
 Gln Asn Met His Arg Ala Ala Thr Leu Ile Gln Ser Phe Tyr Arg Met
                             120
 His Arg Ala Lys Val Asp Tyr
     130
  <210> 4671
  <211> 657
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<212> DNA
<213> Homo sapiens
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Lys Leu Met Leu Asp His Met Thr Asn Thr Thr Asn Ala Ser His Val
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Pro Val Gln Pro Gly Ser Ser Val Val Met Met Val Asn Asn Leu Gly
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Gly Leu Ser Phe Leu Glu Leu Gly Ile Ile Ala Asp Ala Thr Val Arg
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65
Ser Leu Glu Gly Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr
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Phe Met Ser Ala Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Leu
                                 105
            100
Val Asp Glu Pro Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala
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Leu Ser Trp Ala Trp Arg Asn Thr
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PCT/US00/08621 WO 00/58473

395

400

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					aattgtaacc
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2700	•				a ttaggaagag
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                           40
                                              45
Asn Ser Phe Cys Ser Asp Asp Thr Gly Cys Pro Ser Ser Gln Ser Val
                       55
Ser Pro Val Lys Thr Pro Ser Asp Ala Gly Asn Ser Pro Ile Gly Phe
                                       75
                   70
Cys Pro Gly Ser Asp Glu Gly Phe Thr Arg Lys Lys Cys Thr Ile Gly
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Met Val Gly Glu Gly Ser Ile Gln Ser Ser Arg Tyr Lys Lys Glu Ser
                              105
                                                 110
Lys Ser Gly Leu Val Lys Pro Gly Ser Glu Ala Asp Phe Ser Ser Ser
                          120
Ser Ser Thr Gly Ser Ile Ser Ala Pro Glu Val His Met Ser Thr Ala
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                      135
Gly Ser Lys Arg Ser Ser Ser Ser Arg Asn Arg Gly Pro His Gly Arg
                                      155
                  150
Ser Asn Gly Ala Ser Ser His Lys Pro Gly Ser Ser Ser Ser Pro
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Arg Glu Lys Asp Leu Leu Ser Met Leu Cys Arg Asn Gln Leu Ser Pro
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           180
Val Asn Ile His Pro Ser Tyr Ala Pro Ser Ser Pro Ser Ser Ser Asn
                                               205
                          200
Ser Gly Ser Tyr Lys Gly Ser Asp Cys Ser Pro Ile Met Arg Arg Ser
                                          220
                       215
Gly Arg Tyr Met Ser Cys Gly Glu Asn His Gly Val Arg Pro Pro Asn
                                       235
                   230
Pro Glu Gln Tyr Leu Thr Pro Leu Gln Gln Lys Glu Val Thr Val Arg
                                   250
His Leu Lys Thr Lys Leu Lys Glu Ser Glu Arg Arg Leu His Glu Arg
                               265
Glu Ser Glu Ile Val Glu Leu Lys Ser Gln Leu Ala Arg Met Arg Glu
                                               285
                           280
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Asp Trp Ile Glu Glu Glu Cys His Arg Val Glu Ala Gln Leu Ala Leu
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                        295
Lys Glu Ala Arg Lys Glu Ile Lys Gln Leu Lys Gln Val Ile Glu Thr
                                        315
                    310
Met Arg Ser Ser Leu Ala Asp Lys Asp Lys Gly Ile Gln Lys Tyr Phe
                                   330
                325
Val Asp Ile Asn Ile Gln Asn Lys Lys Leu Glu Ser Leu Leu Gln Ser
                               345
Met Glu Met Ala His Ser Gly Ser Leu Arg Asp Glu Leu Cys Leu Asp
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Phe Pro Cys Asp Ser Pro Glu Lys Ser Leu Thr Leu Asn Pro Pro Leu
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                        375
Asp Thr Met Ala Asp Gly Leu Ser Leu Glu Glu Gln Val Thr Gly Glu
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390
385
Gly Ala Asp Arg Glu Leu Leu Val Gly Asp Ser Ile Ala Asn Ser Thr
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Asp Leu Phe Asp Glu Ile Val Thr Ala Thr Thr Thr Glu Ser Gly Asp
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Leu Glu Leu Val His Ser Thr Pro Gly Ala Asn Val Leu Glu Leu Leu
                            440
Pro Ile Val Met Gly Gln Glu Glu Gly Ser Val Val Glu Arg Ala
                                            460
                        455
Val Gln Thr Asp Val Val Pro Tyr Ser Pro Ala Ile Ser Glu Leu Ile
                                        475
                    470
Gln Ser Val Leu Gln Lys Leu Gln Asp Pro Cys Pro Ser Ser Leu Ala
                                    490
               485
Ser Pro Asp Glu Ser Glu Pro Asp Ser Met Glu Ser Phe Pro Glu Ser
                                505
            500
Leu Ser Ala Leu Val Val Asp Leu Thr Pro Arg Asn Pro Asn Ser Ala
                            520
Ile Leu Leu Ser Pro Val Glu Thr Pro Tyr Xaa Gln Cys Gly Cys Arg
                                            540
                        535
Ser Ser Cys Lys Pro Pro His Glu Arg Ala Gly Xaa Phe Ala Ala Cys
                                        555
                   550
Val Glu Glu Arg Leu Asp Gly Val Ile Pro Leu Ala Arg Gly Gly Val
                                    570
                565
Val Arg Gln Tyr Trp Ser Ser Ser Phe Leu Val Asp Leu Leu Ala Val
                                585
            580
Ala Ala Pro Val Val Pro Thr Val Leu Trp Ala Phe Ser Thr Gln Arg
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                            600
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Gly Gly Thr Asp Pro Val Tyr Asn Ile Gly Ala Leu Leu Arg Gly Cys
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300
tttgtateae etgtetaeae teetteette ttteaagaat tgttttte teattetgta
360
aggtgegeta gaaaacaaet geteggaaga aetgtttta teetggtttgt tggeeagett
420

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cttcttagct cttctgtgaa gtatttggaa tgaaagcgca catcctgctg tttccctgac
720
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teteggaage caacaaacte tteateatea etgggggegt taaagatgte agecaettet
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Leu Phe Phe Ser His Ser Val Arg Cys Ala Arg Lys Gln Leu Leu Gly
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Arg Thr Val Phe Ile Trp Phe Val Gly Gln Leu Leu Gly Gly Glu Leu
                            40
Lys Gly Tyr Ser Lys Thr Asn Thr Thr Ser Ser Arg Pro Ala Ser Ser
                        55
Arg Gly Ser Leu Ser Ser Ser Ser Ser Ser Ser Ser Leu Thr Lys
                                        75
                    70
65
Asp Ala Leu Pro Ser Ser Leu Lys Ser Asp Ser Thr Thr Ile Thr Ser
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Gly Leu Val Phe Pro Phe Arg Ser Leu Cys Val Asn Pro Ala Lys Ser
Ser Val Ser Glu Ser Val Ser Ser Ile Lys Ile Leu Leu Ser Ser Ser
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120
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360		tgcgtttaga			
420	•	tctttggcaa			
490			•		
540		ttagaggtac			
600		gccctatcag			
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1500					
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1620					g cacagettae
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1740					

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Thr Ser Phe His Arg Gly Thr Cys Leu Glu Phe Trp His Arg Gly Leu
Thr Glu His Ser Ser Asp Ile Phe Leu Gln Leu Glu Met Leu Cys Trp
Ser Pro Cys Ser Leu Thr Phe Ser Arg Ala Ile Lys Ala Thr Ser Ser
Ile Ala Gly Pro Gln Thr Phe Gln Gly Lys His Cys Phe Thr Ser Cys
Arg Gln Leu Ile Ser Gln Lys Pro Leu Gln Lys Pro Val Leu Pro Gly
Thr Ala Gly Ala Gly Val Cys Lys Ile Lys Glu Gly Gln Leu Arg Thr
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<211> 906
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180
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Pro Phe Ser Phe Phe Pro Ser Cys Thr His Leu Glu Asn Phe Thr Phe
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                                       75
 Phe Met Leu Tyr Cys Gly Ala Arg Gly Lys Thr Cys Leu Tyr Ala Gly
                                   90
                85
Asn Thr His Asn His Ser Phe Arg Phe Val Cys Leu Met Val Ile Cys
                               105
 His Lys Arg Asp Leu Gln Lys Gln Gly Ala Leu Val Asn Val Gln Tyr
      115
 Leu Asp Phe Cys Val Leu Arg Thr Gln Lys Gly Ala Thr Leu Leu Phe
                        135
 Gly Pro Val Ser Gly His Leu Val Ile
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Gln Thr His Gly Thr Ala Arg Ile Gly Thr His Asn Gly Thr Phe His
Cys Asp Glu Ala Leu Ala Cys Ala Leu Leu Arg Leu Leu Pro Glu Tyr
Arg Asp Ala Glu Ile Val Arg Thr Arg Asp Pro Glu Lys Leu Ala Ser
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Cys Asp Ile Val Val Asp Val Gly Gly Glu Tyr Asp Pro Arg Arg His
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Arg Tyr Asp His His Gln Arg Ser Phe Thr Glu Thr Met Ser Ser Leu
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Ser Pro Gly Lys Pro Trp Gln Thr Lys Leu Ser Ser Ala Gly Leu Ile
Tyr Leu His Phe Gly His Lys Leu Leu Ala Gln Leu Leu Gly Thr Ser
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Glu Glu Asp Ser Met Val Gly Thr Leu Tyr Asp Lys Met Tyr Glu Asn
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Phe Val Glu Glu Val Asp Ala Val Asp Asn Gly Ile Ser Gln Trp Ala
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Glu Gly Glu Pro Arg Tyr Ala Leu Thr Thr Thr Leu Ser Ala Arg Val
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Ala Arg Leu Asn Pro Thr Trp Asn His Pro Asp Gln Asp Thr Glu Ala
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Gly Phe Lys Arg Ala Met Asp Leu Val Gln Glu Glu Phe Leu Gln Arg
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Leu Asp Phe Tyr Gln His Ser Trp Leu Pro Ala Arg Ala Leu Val Glu
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Glu Ala Leu Ala Gln Arg Phe Gln Val Asp Pro Ser Gly Glu Ile Val
                                265
Glu Leu Ala Lys Gly Ala Cys Pro Trp Lys Glu His Leu Tyr His Leu
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Glu Ser Gly Leu Ser Pro Pro Val Ala Ile Phe Phe Val Ile Tyr Thr
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Asp Gln Ala Gly Gln Trp Arg Ile Gln Cys Val Pro Lys Glu Pro His
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Ser Phe Gln Ser Arg Leu Pro Leu Pro Glu Pro Trp Arg Gly Leu Arg
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Asp Glu Ala Leu Asp Gln Val Ser Gly Ile Pro Gly Cys Ile Phe Val
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His Ala Ser Gly Phe Ile Gly Gly His Arg Thr Arg Glu Gly Ala Leu
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Ser Gly Leu Ser Leu Gln Glu Ala Gln Gln Ile Leu Asn Val Ser Lys
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Leu Ser Pro Glu Glu Val Gln Lys Asn Tyr Glu His Leu Phe Lys Val
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togtggoggt ctacagottg toccatggog aggtotocta tgaccoacto tatgotggot
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Pro Leu Trp Val Ala Leu Met Ser Ala Leu Ile Leu Gly Leu Leu Phe
Val Ala Val Tyr Ser Leu Ser His Gly Glu Val Ser Tyr Asp Pro Leu
Tyr Ala Gly Phe Ala Val Phe Ala Phe Thr Ser Gly Gly Asp Leu Ile
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 Ser His Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val
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 Ala Pro Leu Pro Leu Ala Pro Xaa Ala Leu Arg Ala Ser Leu Val His
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 Gly Glu Ala Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly
 Asp Thr His Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe
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 Val Thr Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu
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Asn Phe Leu Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His
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Leu His Phe Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu
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Arg Gly Ser Ile Leu Asp Ala Met Arg Pro Gln Gln Leu His Ala Thr
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Glu Ile Thr Ser Ser Gly Phe Arg Leu Ala Trp Pro Pro Leu Leu Thr
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Ala Asp Ser Gly Tyr Tyr Val Leu Glu Leu Val Pro Ser Ala Gln Pro
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Gly Ala Ala Arg Arg Gln Gln Leu Pro Gly Asn Ala Thr Asp Trp Ile
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Asn Ser Gly Val Gly Gln Asp Gly Ser Leu Leu Ser Ser Pro Phe Leu
Lys Gly Phe Leu Ala Gly Tyr Val Val Ala Lys Leu Arg Ala Ser Ala
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Val Leu Gly Phe Ala Val Gly Thr Cys Thr Gly Ile Tyr Ala Ala Gln
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Ala Tyr Ala Val Pro Asn Val Glu Lys Thr Leu Arg Asp Tyr Leu Gln
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Leu Leu Arg Lys Gly Pro Asp
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100

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PCT/US00/08621 WO 00/58473

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Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
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Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
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1140

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    acgcgt
    <210> 4726
    <211> 122
    <212> PRT
    <213> Homo sapiens
    <400> 4726
    Xaa Phe Leu Glu Gly Glu Leu Gly Arg Ser Arg Arg Thr Pro Ala Gly
    Gly Arg Gly Ala Met Leu Ala Ile Asp Thr Ala Ser Asp Ile Leu Ala
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                20
    His Val His Val Tyr Ser Arg Leu Cys Ala Cys Ala Arg Val Tyr Met
                                40
    His Met Cys Thr Gly Ala Cys Ala Cys Val Asn Thr Cys Ser His Val
                            55
    Cys Thr Cys Xaa Ser Cys Pro Cys Xaa Tyr Val His Thr Cys Leu Cys
                        70
    Met His Ala Cys Ile Ala Val Cys Pro Tyr Pro His Val Arg Ile His
                                        90
    Met Arg Leu Cys Leu His Leu Cys Met His Ala Ser Val Leu Leu Arg
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                100
    Ala Trp Val Cys Ile Cys Ala Cys Thr Arg
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<211> 2031
<212> DNA
<213> Homo sapiens
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gaaccactgc ctacaaacca ccctctcctg accctgaaga actgtgtgat tctgcccac
1440
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attggcagtg ccacccacag aacccgcaac accatgtcct tgttggcagc taacaacttg
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tcacaacaac tcacgtggac tgtcctccct cagggettec aggatagect tettttette
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1860
tatetagatg accteettet etgtageece teectaaaaa acteecaaac teacactgee
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<213> Homo sapiens
<400> 4728
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Ala Glu Gly Arg Val Ala Leu Ala Arg Ala Ala Asp Cys Glu Val Glu
                                 25
             20
Gln Trp Asp Ser Asp Glu Pro Ile Pro Ala Lys Glu Leu Glu Arg Gly
                             40
 Val Ala Gly Ala His Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp
                         55
 Lys Arg Ile Leu Asp Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr
                                         75
                     70
 Met Ser Val Gly Ile Asp His Leu Ala Leu Asp Glu Ile Lys Lys Arg
                                     90
 Gly Ile Arg Val Gly Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala
                                 105
             100
 Glu Leu Ala Val Ser Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu
                                                 125
                             120
 Ala Ile Glu Glu Val Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu
                         135
 Trp Leu Cys Gly Tyr Gly Leu Thr Gln Ser Thr Val Gly Ile Ile Gly
                                         155
                     150
 Leu Gly Arg Ile Gly Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly
                                     170
 Val Gln Arg Phe Leu Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala
                                 185
             180
 Ala Glu Phe Gln Ala Glu Phe Val Ser Thr Pro Glu Leu Ala Ala Gln
                             200
 Ser Asp Phe Ile Val Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly
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215
     210
Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe
                                         235
                     230
 Ile Asn Ile Ser Arg Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln
                                     250
                 245
 Ala Leu Ala Ser Gly Lys Ile Ala Ala Gly Leu Asp Val Thr Ser
                                                      270
                                 265
 Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys
                             280
         275
 Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr
                                              300
                         295
 Met Ser Leu Leu Ala Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu
                                          315
                     310
 Pro Met Pro Ser Glu Leu Lys Leu
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 <210> 4729
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 <212> DNA
 <213> Homo sapiens
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 cctgttgttg gatttgggga aattttttgt ttgtttttta tgatttgtat ttgactgaga
 gaaacccact gaagacgtct gcgtgagaat agagaccacc gaggccgact cgcgggccgc
 tgcacccacc gccaaggaca aaaggagccc agcgctacta gctgcacccg attcctccca
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 ageagetaca gttccaacag egacttcaac tactectace ecaccaagea agetgetetg
 420
 aaaagccatt atgcagatgt agatcctgaa aaccagaact ttttacttga atcgaatttg
 480
 gggaagaaga agtatgaaac agaatttcat ccaggtacta cttcctttgg aatgtcagta
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 aatactggaa ttgctctttt tataattctc ttgacatttg tgtcaatatt ttccctgtat
  totgttcatc toottttgaa gactgccaat gaaggagggt otttattata tgaacaattg
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  <210> 4730
  <211> 148
  <212> PRT
  <213> Homo sapiens
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Met Lys Lys Ala Glu Met Gly Arg Phe Ser Ile Ser Pro Asp Glu Asp
Ser Ser Ser Tyr Ser Ser Asn Ser Asp Phe Asn Tyr Ser Tyr Pro Thr
Lys Gln Ala Ala Leu Lys Ser His Tyr Ala Asp Val Asp Pro Glu Asn
                            40
        35
Gln Asn Phe Leu Leu Glu Ser Asn Leu Gly Lys Lys Lys Tyr Glu Thr
Glu Phe His Pro Gly Thr Thr Ser Phe Gly Met Ser Val Phe Asn Leu
                                        75
                    70
Ser Asn Ala Ile Val Gly Ser Gly Ile Leu Gly Leu Ser Tyr Ala Met
Ala Asn Thr Gly Ile Ala Leu Phe Ile Ile Leu Leu Thr Phe Val Ser
                                105
            100
Ile Phe Ser Leu Tyr Ser Val His Leu Leu Lys Thr Ala Asn Glu
                            120
Gly Gly Ser Leu Leu Tyr Glu Gln Leu Gly Tyr Lys Ala Ser Gly Leu
                        135
    130
Val Gly Lys Leu
145
<210> 4731
<211> 2417
<212> DNA
<213> Homo sapiens
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ttggaagaca gctgaggaaa aaggcgccaa taagacaaac tcacagatgg gatttatctc
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 ccaaggagtc aagctataga ctcacaatga caacgtggcc atggctcaaa acactctctg
 aaattacaaa attgctttct gagccaattt aaaagtcaca tgattgaatc caagctattt
 420
 tactttaaat ggtccttttg ctttgcacct gagacctcgc ttggccacag acgtcattcg
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 gcaccttect tecateagag tetgetgeee gggtgggetg ggaaggaggg agatacaaag
 aagaaagtag gcatgatcac tgggtcggtt cccaagccac cctcaccctc caagaaggca
 780
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900 agcgcaggca	gggaaggtgg	caccaaaacc	tagtaagaac	aaagcaaaac	caccgtggtt
960		tattcctctc			
1020		tccgtatatc	•		
1080					
1140		ttctaaagac			-
1200		gcgaagttcc			
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cagctgccag	ctcttaattc	tcaaggagat	cgaagggaca	ggaaggagag	ccctgcgcca
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1380 tttttactaa	gttataaaaa	aaaaaacccc	atcaccaaag	acacctgtgc	acaagtgtct
1440 gtcccttctg	tcaccaacct	agggcactac	accettecca	acatcatgac	cctactgcca
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1980 gaaacaccaa	. gggccaaaac	gccagcagcc	actaacccaa	acccacgtct	tectectgte
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2100					aaggaacctc
2160					tcagtaaagg
2220					
2280					aataaccgga
2340					agacgctcaa
accetecage	g agttcctcga	ggaaagagga	gagaatgato	aaggtagtgt	: ttaactgcca
2400					

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<210> 4732
<211> 129
<212> PRT
<213> Homo sapiens
<400> 4732
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Ser Val Ala Pro Cys Gln Pro Ala Leu Arg Glu Asp Arg Val Ser His
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Ala Arg Met Ala Gly His Val Ser Val Leu Val Ser His Phe Pro Pro
Ser Val Thr Tyr Leu Gly Ile Pro Gln Gly Leu Leu Glu Cys Asp Cys
                        55
Pro Leu Pro Ser Cys Leu Gly Tyr Lys Ser Trp Pro Tyr Val Pro Ala
                                        75
Val Arg Gly Ser Gly Asn Pro Thr Gln Pro Pro Val Leu Gly Trp Ser
                                    90
                85
Val Ser Ile His Pro Leu Val Val Ile Glu Ala Ala Leu Pro Val Leu
                                105
            100
Gly Glu Asp Ile Trp Ala Thr Arg Ala Pro Leu Ala Pro Ser Arg Arg
                                                 125
                            120
Lys
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<212> DNA
<213> Homo sapiens
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tecattecca ataacgtgaa getgeagtgt gtateetgga acaaggaaca agggtteata
gcatgcggtg gtgaagatgg attactgaaa gttttgaaat tagagacgca gacagatgat
gcaaaattga ggggccttgc agcccccagt aacctttcta tgaatcagac tcttgaaggt
catagtggtt ctgttcaagt tgtaacatgg aatgagcagt atcagaagtt gactaccagt
gatgaaaacg ggcttatcat tgtgtggatg ttatataaag gctcttggat tgaggagatg
atcaacaatc gaaataaatc agttgttcgc agtatgagct ggaatgctga cggacagaag
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 540
 tgg
 543
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<211> 181
<212> PRT
<213> Homo sapiens
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Val Glu Gly Leu Ser Gly Arg Arg Asp Pro Leu Gly Asp Pro Thr Met
                                25
           20
Phe Phe Tyr Leu Ser Lys Lys Ile Ser Ile Pro Asn Asn Val Lys Leu
                           40
Gln Cys Val Ser Trp Asn Lys Glu Gln Gly Phe Ile Ala Cys Gly Gly
                        55
Glu Asp Gly Leu Leu Lys Val Leu Lys Leu Glu Thr Gln Thr Asp Asp
                                        75
                    70
Ala Lys Leu Arg Gly Leu Ala Ala Pro Ser Asn Leu Ser Met Asn Gln
                                    90
               85
Thr Leu Glu Gly His Ser Gly Ser Val Gln Val Val Thr Trp Asn Glu
                                                    110
                                105
Gln Tyr Gln Lys Leu Thr Thr Ser Asp Glu Asn Gly Leu Ile Ile Val
                            120
       115
Trp Met Leu Tyr Lys Gly Ser Trp Ile Glu Glu Met Ile Asn Asn Arg
                                            140
                        135
Asn Lys Ser Val Val Arg Ser Met Ser Trp Asn Ala Asp Gly Gln Lys
                                       155
                   150
Ile Cys Ile Val Tyr Glu Asp Gly Ala Val Ile Val Gly Ser Val Asp
                                    170
                165
Gly Asn Arg Ile Trp
          . 180
<210> 4735
<211> 300
<212> DNA
<213> Homo sapiens
<400> 4735
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aggagetgee ggeggetetg ccaagtecag cagcaatggg cetgtggeea gtgcacagta
cgtgtcccag gcaaaagcct cagctttgca gcagcagcag tactaccagt ggtaccagca
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 <210> 4736
 <211> 93
 <212> PRT
 <213> Homo sapiens
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Glu Asn Pro Glu Trp Glu Lys Ala Arg Gln Ala Leu Ala Ser Ile Ser
                                25
Lys Ser Gly Ala Ala Gly Gly Ser Ala Lys Ser Ser Ser Asn Gly Pro
                            40
        35
Val Ala Ser Ala Gln Tyr Val Ser Gln Ala Lys Ala Ser Ala Leu Gln
Gln Gln Gln Tyr Tyr Gln Trp Tyr Gln Gln Asp Asn Tyr Ala Tyr Pro
Tyr Ser Tyr Tyr Tyr Pro Met Pro Pro Gly Pro Gly Met
                                    90
                85
<210> 4737
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<212> DNA
<213> Homo sapiens
<400> 4737
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caagetegge ceettteaac tetgecaaga atggeteeca eetggetete agacatteec
 ctggtccaac ccccaggcca tcaagatgtc tcagagaggc ggctagacac ccagagacct
 caagtgacca tgtgggaacg ggatgtttcc agtgacaggc aggagccagg gcggagaggc
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 gtcccttctg aggtccacag ccagacatgg gaactggagc gacagaagct tctggaaacc
  atgcagetet tgcaggagga eegggacage etgcatgeca eegeggaget getgeaggtg
  cgggtgcaga gcctcacaca catcctcgcc ctgcaggagg aggagctgac caggaaggtt
  1020
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1260 gagcgtatgg	gtgccaaggg	cctgcagttg	gagctgagcc	gtgctcagga	ggccaggcgt
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1920 tcagacacag	agaggaggct	gaacgaggct	cggagggagc	atgccaaggc	cgtggtctcc
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2100 gagagggata	agaacctcat	gctggccaco	: ttgcagcagg	aaggtctcct	ctcccgttac
2160 aagcagcag	gactgttgac	agttcttcct	tecetactgg	ataagaagaa	atctgtggtg
2220 tccagcccca	a ggeeteeaga	a gtgttcagca	tetgeacetg	tagcagcagc	agtgcccacc
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2340 gccatttcc	a aagaggaag	c tgtttgtcaa	ggagacaaco	ttgacagatg	g ctccagctcc
2400 aatccccag	a tgagcagcta	a agcagctgad	agttggaggg	g aaagccagco	tgggggctgg
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2580	a aaaaaaaaa				
2602					

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<211> 756
<212> PRT
<213> Homo sapiens
<400> 4738
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1
His Gln Asp Val Ser Glu Arg Arg Leu Asp Thr Gln Arg Pro Gln Val
                            . 25
          20
Thr Met Trp Glu Arg Asp Val Ser Ser Asp Arg Gln Glu Pro Gly Arg
                          40
Arg Gly Arg Ser Trp Gly Leu Glu Gly Ser Gln Ala Leu Ser Gln Gln
                     55
Ala Glu Val Ile Val Arg Gln Leu Gln Glu Leu Arg Arg Leu Glu Glu
                  70
Glu Val Arg Leu Leu Arg Glu Thr Ser Leu Gln Gln Lys Met Arg Leu
                                 90
              85
Glu Ala Gln Ala Met Glu Leu Glu Ala Leu Ala Arg Ala Glu Lys Ala
                             105
Gly Arg Ala Glu Ala Glu Gly Leu Arg Ala Ala Leu Ala Gly Ala Glu
                                            125
                         120
Val Val Arg Lys Asn Leu Glu Glu Gly Arg Gln Arg Glu Leu Glu Glu
                                140
                      135
Val Gln Arg Leu His Gln Glu Gln Leu Ser Ser Leu Thr Gln Ala His
                150 155
Glu Glu Ala Leu Ser Ser Leu Thr Ser Lys Ala Glu Gly Leu Glu Lys
                                 170
              165
Ser Leu Ser Ser Leu Glu Thr Arg Arg Ala Gly Glu Ala Lys Glu Leu
                              185
Ala Glu Ala Gln Arg Glu Ala Glu Leu Leu Arg Lys Gln Leu Ser Lys
                                             205
                          200
Thr Gln Glu Asp Leu Glu Ala Gln Val Thr Leu Val Glu Asn Leu Arg
                                         220
                      215
Lys Tyr Val Gly Glu Gln Val Pro Ser Glu Val His Ser Gln Thr Trp
                  230
                                   235
Glu Leu Glu Arg Gln Lys Leu Leu Glu Thr Met Gln Leu Leu Gln Glu
                                 250
               245
Asp Arg Asp Ser Leu His Ala Thr Ala Glu Leu Leu Gln Val Arg Val
                               265
 Gln Ser Leu Thr His Ile Leu Ala Leu Gln Glu Glu Glu Leu Thr Arg
        275 280
 Lys Val Gln Pro Ser Asp Ser Leu Glu Pro Glu Phe Thr Arg Lys Cys
                                          300
                       295
 Gln Ser Leu Leu Asn Arg Trp Arg Glu Lys Val Phe Ala Leu Met Val
                                       315
                  310
 Gln Leu Lys Ala Gln Glu Leu Glu His Ser Asp Ser Val Lys Gln Leu
                                  330
                325
 Lys Gly Gln Val Ala Ser Leu Gln Glu Lys Val Thr Ser Gln Ser Gln
                              345
           340
 Glu Gln Ala Ile Leu Gln Arg Ser Leu Gln Asp Lys Ala Ala Glu Val
                           360
 Glu Val Glu Arg Met Gly Ala Lys Gly Leu Gln Leu Glu Leu Ser Arg
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375
Ala Gln Glu Ala Arg Arg Trp Trp Gln Gln Gln Thr Ala Ser Ala Glu
                     395
       390
Glu Gln Leu Arg Leu Val Val Asn Ala Val Ser Ser Ser Gln Ile Trp
                              410
            405
Leu Glu Thr Thr Met Ala Lys Val Glu Gly Ala Ala Ala Gln Leu Pro
                          425
         420
Ser Leu Asn Asn Arg Leu Ser Tyr Ala Val Arg Lys Val His Thr Ile
                            . 445
                       440
Arg Gly Leu Ile Ala Arg Lys Leu Ala Leu Ala Gln Leu Arg Gln Glu
                   455
Ser Cys Pro Leu Pro Pro Pro Val Thr Asp Val Ser Leu Glu Leu Gln
                                 475
      470
Gln Leu Arg Glu Glu Arg Asn Arg Leu Asp Ala Glu Leu Gln Leu Ser
                  490
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Ala Glu Arg Gln Gln Leu Ser Lys Val Ala Gln Gln Leu Glu Gln Glu
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Leu Gln Gln Thr Gln Glu Ser Leu Ala Ser Leu Gly Leu Gln Leu Glu
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Val Ala Arg Gln Gly Gln Gln Glu Ser Thr Glu Glu Ala Ala Ser Leu
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Arg Gln Glu Leu Thr Gln Gln Glu Leu Tyr Gly Gln Ala Leu Gln
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Glu Lys Val Ala Glu Val Glu Thr Arg Leu Arg Glu Gln Leu Ser Asp
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Thr Glu Arg Arg Leu Asn Glu Ala Arg Arg Glu His Ala Lys Ala Val
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Val Ser Leu Arg Gln Ile Gln Arg Arg Ala Ala Gln Glu Lys Glu Arg
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Ser Gln Glu Leu Arg Arg Leu Gln Glu Glu Ala Arg Lys Glu Glu Gly
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Gln Arg Leu Ala Arg Arg Leu Gln Glu Leu Glu Arg Asp Lys Asn Leu
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Met Leu Ala Thr Leu Gln Gln Glu Gly Leu Leu Ser Arg Tyr Lys Gln
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Gln Arg Leu Leu Thr Val Leu Pro Ser Leu Leu Asp Lys Lys Ser
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Val Val Ser Ser Pro Arg Pro Pro Glu Cys Ser Ala Ser Ala Pro Val
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Ala Ala Ala Val Pro Thr Arg Glu Ser Ile Lys Gly Ser Leu Ser Val
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                710
Leu Leu Asp Asp Leu Gln Asp Leu Ser Glu Ala Ile Ser Lys Glu Glu
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Val His Ile Leu Trp Val Ser Trp Glu Gln Gly Trp Ala Val Pro Glu
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Ala Pro Ser Gln Pro Ala Pro Gln Ala Ala Asn Gly Ser Leu Leu
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Gly Gln Gly Ile Cys Gly Gln Glu Ser Thr Leu Val Arg Arg Arg Leu
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Ser Phe Ile Pro Pro Pro Phe Pro Pro Phe Gly Phe Phe Lys Lys Phe
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Pro Ser Phe Phe Arg Lys Gly Lys Gly Glu Arg Gly Gln Arg
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Lys Thr Pro Phe Phe Phe Leu Arg Lys Lys Arg Glu Lys Lys Lys
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Lys Ala Pro Ala Gly Asp Gly Ser Gln Thr Arg Gly Lys Met Ser Glu
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Gly Gly Arg Lys Ser Ser Leu Leu Gln Lys Ser Lys Ala Asp Ser Ser
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Gly Val Gly Lys Gly Asp Leu Gln Ser Thr Leu Leu Glu Gly His Gly
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Thr Ala Pro Pro Asp Leu Asp Leu Ser Ala Ile Asn Asp Lys Ser Ile
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Val Lys Lys Thr Pro Gln Leu Ala Lys Thr Ile Ser Lys Lys Pro Glu
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 Ala Asn Gly Met Met Glu
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Gln Asp Val Met Glu Gly Leu Ser Lys His Lys Gln Gln Arg Gly Thr
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Thr Glu Ile Gly Met Ile Gly Ser Lys Pro Phe Ser Thr Val Lys Tyr
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Lys Asn Glu Gly Pro Asp Tyr Arg Leu Tyr Lys Ser Glu Pro Glu Leu
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Thr Thr Val Ala Glu Val Asp Glu Ser Asn Gly Glu Glu Lys Ser Glu
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 Pro Val Ser Glu Ile Glu Thr Ser Val Val Lys Gly Ser His Phe Pro
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 Val Gly Val Val Pro Pro Arg Ala Lys Ser Pro Thr Pro Glu Ser Ser
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 Glu Ser Thr Arg Pro Arg Met Thr Val Glu Glu Gln Met Glu Arg Ile
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 Cys Glu Gln Asn Leu Leu Ser Arg Pro Asp Gly Ser Ala Ser Phe Leu
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Gln Gly Asp Thr Ser Val Leu Ala Gly Val Tyr Gly Pro Ala Glu Val
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Lys Val Ser Lys Glu Ile Phe Asn Lys Ala Thr Leu Glu Val Ile Leu
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90

85

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Glu Lys Ser Arg Glu Arg Leu Ile Arg Asn Thr Cys Glu Ala Val Val
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Leu Gly Thr Leu His Pro Arg Thr Ser Ile Thr Val Val Leu Gln Val
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Val Ser Asp Ala Gly Ser Leu Leu Ala Cys Cys Leu Asn Ala Ala Cys
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Met Ala Leu Val Asp Ala Gly Val Pro Met Arg Ala Leu Phe Cys Gly
                                185
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Val Ala Cys Ala Leu Asp Ser Asp Gly Thr Leu Val Leu Asp Pro Thr
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                            200
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Ser Lys Gln Glu Lys Glu Ala Arg Ala Val Leu Thr Phe Ala Leu Asp
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Ser Val Glu Arg Lys Leu Leu Met Ser Ser Thr Lys Gly Leu Tyr Ser
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                                        235
Asp Thr Glu Leu Gln Gln Cys Leu Ala Ala Ala Gln Ala Ala Ser Gln
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His Gly Thr Leu Val Gly Leu Leu Pro Val Pro His Pro Ile Leu Ile
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Arg Lys Tyr Gln Ala Asn Ser Gly Thr Ala Met Trp Phe Arg Thr Tyr
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Ser Pro Glu Gly Val Val Lys Ala Gly Ala Pro Glu Leu Val Asp Lys
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Gly Pro Leu Val Pro Thr Leu Pro Phe Pro Leu Arg Lys Pro Arg Lys
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Asp	Ser	Glu	Phe	Thr	Lys	Val	Glu	Met	Asp	Asn	Leu	Asp	Asn	Ala	GIN
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Ĭ. <b>a</b> 1	ו מער	. Gl 11	Live	Leu	Glu	Glu	Gln	Leu	Gln	Asp	Leu	Asp	Val	. Ala	Leu
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T	, [ 1	Tare	ינוט יונט	Arc	Ala	Glii			Lvs	Glu	Arg	Lev	Val	Tyr	Val
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Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg
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Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly
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Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn
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Thr Gly Gln Asp Thr Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr
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Ser Gln Glu Leu Gln Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly
Ser Leu Gln His Val Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys
        115
Ala Gly Ala His Arg Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His
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Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp
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Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn
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Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe
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Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala
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Trp Leu Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile
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Ile Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
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Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val
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Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His Val Pro
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1020
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Asp Phe Ser Glu Ala Asp Leu Val Asp Val Ser Ala Tyr Ser Gly Leu
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Gly Glu Asp Ser Ala Gly Ser Ala Leu Glu Glu Asp Asp Glu Asp Asp
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Glu Gly Asp Gly Glu Pro Pro Tyr Glu Pro Glu Ser Gly Cys Val Glu
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Ile Pro Gly Leu Ser Glu Glu Glu Asp Pro Ala Pro Ser Arg Lys Ile
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His Phe Ser Thr Ala Pro Ile Gln Val Phe Ser Thr Tyr Ser Asn Glu
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Asp Tyr Asp Arg Arg Asn Glu Asp Val Asp Pro Met Ala Ala Ser Ala
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Glu Tyr Glu Leu Glu Lys Arg Val Glu Arg Leu Glu Leu Phe Pro Val
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Glu Leu Glu Lys Asp Ser Glu Gly Leu Gly Ile Ser Ile Ile Gly Met
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Gly Ala Gly Ala Asp Met Gly Leu Glu Lys Leu Gly Ile Phe Val Lys
Thr Val Thr Glu Gly Gly Ala Ala His Arg Asp Gly Arg Ile Gln Val
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 Asn Asp Leu Leu Val Glu Val Asp Gly Thr Ser Leu Val Gly Val Thr
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 Gln Ser Phe Ala Ala Ser Val Leu Arg Asn Thr Lys Gly Arg Val Arg
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 Phe Met Ile Gly Arg Glu Arg Pro Gly Glu Gln Ser Glu Val Ala Gln
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 Leu Ile Gln Gln Thr Leu Glu Gln Glu Arg Trp Gln Arg Glu Met Met
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 Glu Gln Arg Tyr Ala Gln Tyr Gly Glu Asp Asp Glu Glu Thr Gly Glu
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 Tyr Ala Thr Asp Glu Asp Glu Glu Leu Ser Pro Thr Phe Pro Gly Gly
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280

275

285

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Glu Met Ala Ile Glu Val Phe Glu Leu Ala Glu Asn Glu Asp Ala Leu
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Ser Pro Val Asp Met Glu Pro Glu Lys Leu Val His Lys Phe Lys Glu
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Leu Gln Ile Lys His Ala Val Thr Glu Ala Glu Ile Gln Gln Leu Lys
                                   330
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Arg Lys Leu Gln Ser Leu Glu Gln Glu Lys Gly Arg Trp Arg Val Glu
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Lys Ala Gln Leu Glu Gln Ser Val Glu Glu Asn Lys Glu Arg Met Glu
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Lys Leu Glu Gly Tyr Trp Gly Glu Ala Gln Ser Leu Cys Gln Ala Val
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Asp Glu His Leu Arg Glu Thr Gln Ala Gln Tyr Gln Ala Leu Glu Arg
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Lys Tyr Ser Lys Ala Lys Arg Leu Ile Lys Asp Tyr Gln Gln Lys Glu
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Ile Glu Phe Leu Lys Lys Glu Thr Ala Gln Arg Arg Val Leu Glu Glu
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 Phe Leu Lys Ala Gln Val Leu Pro Pro Leu Arg Asp Val Arg Thr Arg
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                         55
 Pro Glu Val Gly Asp Leu Leu Arg Asn Lys Leu Val Arg Leu Met Thr
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 His Leu Asp Thr Asp Val Lys Arg Val Ala Ala Glu Phe Leu Phe Val
                                     90
 Leu Cys Ser Glu Ser Val Pro Arg Phe Ile Lys Tyr Thr Gly Tyr Gly
                                 105
 Asn Ala Ala Gly Leu Leu Ala Ala Arg Gly Leu Met Ala Gly Gly Arg
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 Pro Glu Gly Gln Tyr Ser Glu Asp Glu Asp Thr Asp Thr Asp Glu Tyr
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                         135
 Lys Glu Ala Lys Ala Ser Ile Asn Pro Val Thr Gly Arg Val Glu Glu
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160
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145
Lys Pro Pro Asn Pro Met Glu Gly Met Thr Glu Glu Gln Lys Glu His
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Glu Ala Met Lys Leu Val Thr Met Phe Asp Lys Leu Ser Ser Pro Thr
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Ala Pro Phe Pro Asn Arg Asn Arg Val Ile Gln Pro Met Gly Met Ser
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Pro Arg Gly His Leu Thr Ser Leu Gln Asp Ala Met Cys Glu Thr Met
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                            40
Lys Pro Asp Val Val Gln Asp Lys Glu Thr Glu Arg Asn Leu Gln Arg
                        55
Ile Ala Thr Arg Gly Val Val Gln Leu Phe Asn Ala Val Gln Lys His
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Gln Lys Asn Val Asp Glu Lys Val Lys Glu Ala Gly Ser Ser Met Arg
                                    90
Lys Arg Ala Lys Leu Ile Ser Thr Val Ser Lys Lys Asp Phe Ile Ser
                               105
           100
Val Leu Arg Gly Met Asp Gly Ser Thr Asn Glu Thr Ala Ser Ser Arg
                                               125
                           120
Lys Lys Pro Lys Ala Lys Gln Thr Glu Val Lys Ser Glu Glu Gly Pro
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Gly Trp Thr Ile Leu Arg Asp Asp Phe Met Met Gly Ala Ser Met Lys
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Leu Lys Arg Pro Ser Leu Thr Ile Leu Phe Asn Ile Pro Pro Arg Leu
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Asn
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 Glu Ser Arg Tyr Leu Arg Ala Val Leu Ala Asn Glu Thr Gly Leu Ala
                         55
 Arg Leu Leu Ser Arg Leu Ser Gly Val Gly Leu Arg Leu Thr Thr Ser
                     70
                                         75
 Leu Phe Arg Asp Ser Pro Ala Gly Asp His Asp Tyr Ala Leu Pro Val
                                     90
 Gly Lys Gln Lys Gln Asp Leu Leu Glu Glu Asp Asp Ser Ala Gly Gly
                                 105
 Val Cys Leu His Val Asp Lys Asp Lys Val Ser Val Glu Phe Cys Ser
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125
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Ala Cys Ala Arg Lys Ala Ser Ser Leu Lys Ile Phe Phe Phe Arg
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GIU			rea	PIO	vai	101				1	102	0 ~			
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Leu Lys Leu Lys Leu Lys Leu Lys Val 118	Lys Glu Thr Val 109 Ser Fhe Glu Ala Leu 117 Asp	Met Pro 107 Glm 0 Ala Glu Val 115 Gly 70 Tle	Phe 106 Val 5 Glu Val Arg 114 Gln 55 V Leu E Tyr	104 Asn 0 Leu Glu Asp Phe 112 Tyr 0 Ile Asn Arg	103 Val S Lys Gly Phe Tyr 111 Ala S Leu Thr Cys 119 Thr	Leu Cys Met 109 Leu O Ile Val Asn Leu 117 Leu O C Gly	Cys 108 Thr His Asp Arg Leu 116 Pro	Ser 1060 Ile 0 Ser Leu Gly Glu 1144 Leu 0 Gln Lys	105 Ile 5 Ser Arg Met Arg 1133 Glu 5 Thr Ser 121 121 111	Trp  O  Ala  Arg  Val  Leu  111  Phe  O  Asp  Val  128  Val  129  Val	Lys Thr Ala Asn 110 Val 5 Cys Arg Arg Thr	Leu 108 Trp 0 Ala 1le Tyr 116 1 Phe	Asp 107 Glu 5 Val Met Ser Arg 115 Phe 5 Phe	Ile Ile O Pro Val Lys Ile 113 Ala O Ala Ser Cys	Glu  Fro  Ser  Gln  Trp  1120  His  Ala  Tyr  Ala  Lys  1200  Gln
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Ser Leu Arg Gly Lys Ala Val Val Leu Met Gly Lys Asn Thr Met Met
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Gln Asn Thr Gly Leu Gly Pro Glu Lys Thr Ser Phe Phe Gln Ala Leu
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Val Gln Leu Ile Lys Thr Gly Asp Lys Val Gly Ala Ser Glu Ala Thr
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Gln Gln Val Phe Asp Asn Gly Ser Ile Tyr Asn Pro Glu Val Leu Asp
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Pro His Ser Ile Ile Asn Gly Tyr Lys Arg Val Leu Ala Leu Ser Val
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Ala Asp Pro Ser Ala Phe Val Ala Ala Ala Pro Val Ala Ala Ala Thr
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Thr Ala Ala Pro Ala Ala Ala Ala Ala Ala Pro Ala Lys Val Glu
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Val Leu Val Asp Glu Glu Ser Gln Arg Glu Pro Gly Ala Ser Gly Ala
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Pro Gly Gln Lys Lys Cys Tyr Ser Cys Pro Val Cys Ser Arg Val Phe
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<211> 4481

<212> DNA

<213> Homo sapiens

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